

WORKBENCH

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FASTENER DIVISION

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We've noticed that many men—carpenters especially—are in the habit of referring to every portable saw as a Skilsaw. And we can understand how it happens. Skil pioneered the development of the portable circular saw, and has kept at it for 40 years. Today there are more of ours in use than any other make.

Nonetheless, we hasten to point out that a Skilsaw power saw is *not* just any saw. As you might expect, in 40 years we've come up with some pretty strong improvements. Features that account for our saws having stayed ahead of the rest.

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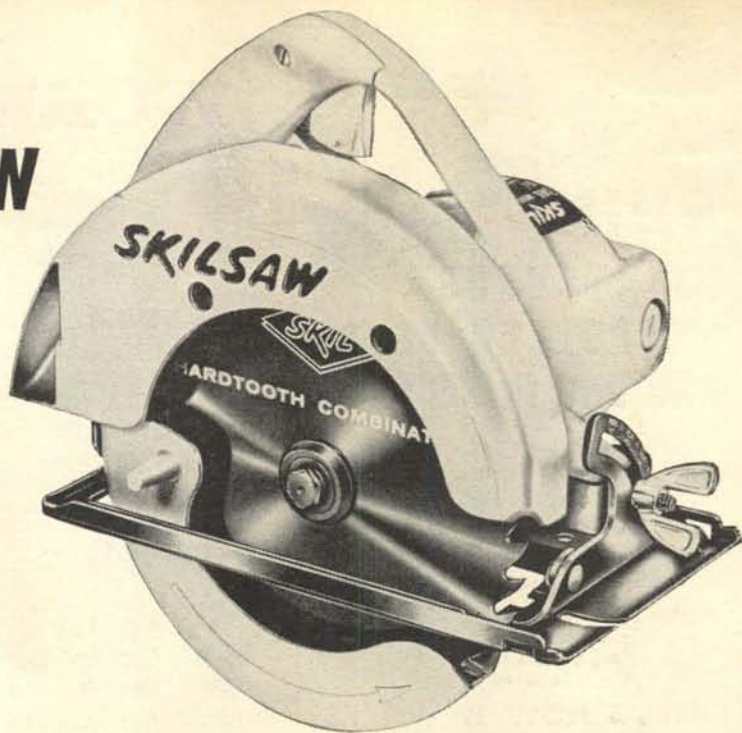
Exclusive sawdust ejection—With some circular saws, sawdust can be a real headache. It builds up in front of your line of cut and slows you down. Skil solves this with an air stream ejection system

that blows sawdust away from you and down to the floor. Still another reason why you see where you're going with a Skilsaw: The upper blade guard is specially designed to give you a clear, continuous view of the blade all through the cut.

Easy-to-set depth control—For safe, splinter-free cutting, a circular saw blade should extend about 1/2-inch below the depth of the piece to be cut. But most blade adjustments play hard-to-get-at . . . are located behind the blade or inside the blade guard. On a Skilsaw, by contrast, you can conveniently set blade depth in seconds, with one hand. (By the way, other saws tend to "wobble" when making shallow cuts. But your Skilsaw stays on the straight and narrow at any depth.)

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Exclusive blade lock—Blade changing on heavy-duty Skilsaw models is simplicity itself. Push a button—the blade is safely engaged and locked.



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When a Skilsaw Power Saw leaves our plant it carries a *lifetime* guarantee against defects in material or workmanship. And we back up this guarantee with one of the most extensive nationwide networks of factory service centers in the field. Unlike most cheap power saws, a Skilsaw Circular Saw can be serviced anywhere in matter of hours or a couple of days. (We know of instances—not too rare—where owners of other makes have waited a month or more while the tool is in repair.)

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Skilsaw Power Saws are made for a range of blade sizes from 5 1/2" to 8 1/4", with prices starting under \$30. Look for them at lumber, hardware and department stores where you expect to find quality.

Remember—*every circular saw is not a Skilsaw*. Just most of them.

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WORKBENCH volume 20 number 3

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Your answers to these four questions could mean extra money for you.

If you will answer just four questions for me—and if your answer to each question is either “yes” or “maybe”—I will send you a beautifully illustrated booklet absolutely free, that may open doors to new beauty and new prosperity in your life.

by Donald B. Warner

You may ask, “Who is this man Warner who makes such an offer to strangers?” Let me answer quickly so we can get to the four questions for you. I am president of the Warner Electric Company. For many years our principal activity has been in helping both men and women start home-based businesses. Some of these have been for extra money in spare time. Some have been full time activities that could bring incomes as high as \$10,000 a year. But, it is not these businesses I want to tell you about.

Recently our marketing director discovered a fantastic new use for one of our home manufacturing methods. Up 'til then, it always had been used for making other products. In the past, this method turned out products that brought a good profit on each one sold—\$2.50 to \$3.00 back for each \$1.00 invested in materials. And, it was used by both men and women to make money for spare time work.

But now, we have discovered how to use this method to bring profit margins so big that they are almost unbelievable. Can you imagine getting \$7.50 for a product that was made from raw material and supplies costing only 50¢? That's equivalent to getting \$15.00 back for a dollar's worth of materials, and a little spare time.

The beauty of it is that anyone can learn this method—men or women. It can be learned in a few hours. Within a day after getting the instructions, you can be making saleable articles so beautiful that your friends will wonder why they never before had recognized your artistic genius. Artistic? Yes, artistic, because the products you turn out are so beautiful that the world's greatest designers could not create them without Nature as a guide. But you can. That doesn't sound believable, does it? Yet, it is true, because you make Nature your partner.

While world famous designers try to copy nature, you capture all the beauty of her myriad forms and give them everlasting life through a process known as

“Metalizing.” Nature supplies the raw materials—leaves, flowers, seed pods, shells, pebbles, even grotesquely shaped twigs and whole fruit. By the Warner Method of Metalizing you coat them in copper and then finish them with a plating of Sterling silver, or 14 Karat Gold. Suddenly—without studying art or design—your friends start thinking of you as an artistic genius. But, better still, you have people eager to buy your creations because they are excitingly new, because they have transcendental beauty, and because they are exclusive and useful objects of art that cannot be duplicated at any price!

In addition to showing you how to do the work, my company shows you how to get others to sell for you; how to get customers coming to you; how to make sales without any house-to-house canvassing; and how to make one sale bring in two, three, or more referred sales.

Now, if your answer is either “yes” or “maybe” to the four questions that follow, I will send you the beautiful illustrated booklet that explains the whole wonderful plan. You don't have to make any promises. You don't have to spend a single penny, except for a postage stamp. And, you don't have to return the book. There is no charge now or at any other time for this book. It is yours to keep or give away, and it comes to you by mail, postage prepaid. I have no salesmen, so



there won't be anyone ringing your doorbell to try to sell you anything.

Question One: Do you have a desire to express your creative ability and artistic taste in creating beautiful products?

Question Two: Would you like to turn that desire into money—extra cash for spare hours whenever you want to work at home?

Question Three: Do you enjoy working with your hands?

Question Four: After reading all about it, if you like this plan and want to make a start, can you make a small investment to get your business started—as little as \$52.75?

Don't write me your answers. Just answer yourself. You are under no obligation. You are not committing yourself to a single thing. But, if your answers to yourself are “yes” or “maybe,” then you should send the coupon printed below right away.

Investigating this opportunity doesn't cost you a penny. Yet, it is so new, so fascinating, so artistic, so much fun, so easy to do, and so profitable that if your answer to question two was “yes,” then you can't say “No” to this opportunity without further investigation. So, let me hear from you by the next mail.

Donald B. Warner, President, WARNER ELECTRIC COMPANY, Dept. M-6-EE
1512 Jarvis Avenue, Chicago, Illinois 60626

Mr. Donald B. Warner, President
Warner Electric Company, Dept. M-6-EE
1512 Jarvis Avenue, Chicago, Illinois 60626

Dear Mr. Warner:

Please send me a copy of your illustrated booklet entitled, “The Warner Home Work Plan for Making Money in Spare Time.” It is understood there is no charge for the booklet and that no salesmen will call.

NAME _____

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7041 Olcott Ave., Chicago, Ill. 60631

Letters to the Editor

Dear Mr. Hedden:

Enclosed is a snapshot of the spinning wheel I made from plans in WORKBENCH. Made it on a lathe I built from lengths of pipe, using automobile connecting rods for the head and tailstock. Am 80 years old, but certainly enjoy doing lathe work. Sorry the photo of the lathe is too dark.

Bert Koenes, Clearwater, Fla.



Dear Mr. Koenes:

The spinning wheel is beautiful, and we are publishing your snapshot of it. You say you used all white oak; a tough wood to work. The snapshot of the lathe is too dark, and not clear so we did not publish it. Mr. Koenes has offered to describe how he built his unusual lathe if enough readers request it.

Dear Mr. Hedden:

Am a retired farmer, 65; in 1961 had a leg removed, started putting in my time mailing farm magazines to farmers in other parts of the world. Presently I had requests from women for some of our Home-type magazines. Just lately have had requests from school and Sunday-school teachers for names of youngsters in other countries for their students to correspond with. In each case have been sending magazines to break the ice. One of my friends gave me a stack of WORKBENCH and I read them all. Found them most interesting, and figure they will be helpful to foreign craftsmen. Sending copies to groups of boys in India, Indonesia, Ceylon, Japan, East Pakistan, Nigeria, East Germany, Mauritius and Hungary.

If you or any of your readers would have any back copies they would like to donate, would appreciate receiving them.

Floyd B. Padgett, Rt. 1, Box 108, East Palestine, Ohio, 44413.

Dear Mr. Padgett:

We consider your project most worthwhile and have sent those back issues we had available in the office.

If any readers want to donate back issues of any magazine, send them along to Mr. Padgett in East Palestine. Please do not send boxes of magazines collect; Mr. Padgett is spending his time and money sending the magazines overseas, and also visits churches and other organizations telling of his project.

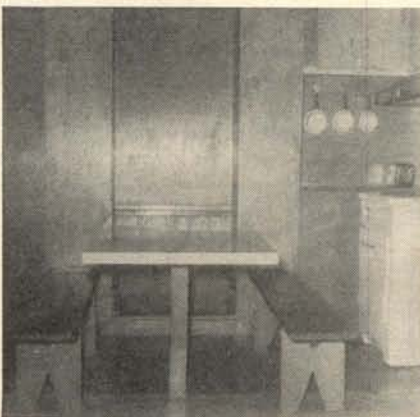
Stamp collectors might want to get names from Mr. Padgett for correspondence, as well as for sending magazines.

We have read of an organization "Magazines for Friendship", and Mr. Padgett is another "organization" who is making friends for us in other lands. Magazines give a much truer picture of us, than do movies and television shows that are sent overseas.

Dear Mr. Hedden:

When I first glanced at the cover on the Jan.-Feb., 1964 issue I thought it was a picture of a divider in my lake cabin. Am enclosing photos of it to show you the similarity.

R. W. Carrollton, Lyons, Ga.



Dear Mr. Carrollton:

There is indeed a strong resemblance. Just proves the basic idea is a good one for saving space. Your divider has cabinets on both sides, something we did not mention in our project. When used as a wall, having cabinets on both sides would make the unit even more useful.

Dear Mr. Hedden:

Especially enjoy the Letters to the Editor in WORKBENCH. Am enclosing a photo of a pair of planters I made in the Fixit Shop I run in my double garage. Each planter has 64 blocks measuring 1-5/8 x 1-5/8 x 5-5/8 in. Am 76, keep busy repairing furniture, and making new items.

Frank Worden, Davenport, Iowa.



Dear Mr. Worden:

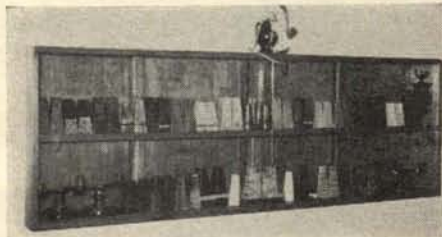
Our congratulations on your workmanship. We hope we can keep busy at a job we enjoy when we are 76 years young, as you do.

Dear Mr. Hedden:

Twenty years ago I worked as custodian in one of our largest elementary schools. We had 35 clocks in the building, but seldom sent any out for repair. A shallow tin of kerosene in each one kept them lubricated and rust-free.

Am enclosing a photo of a "shadow-box" cabinet with glass doors I made to house my collection of salt and pepper shakers. Can provide plans if your readers want to see them published.

Frank Leutz, Allentown, Pa.



Dear Mr. Leutz:

By now we are confirmed believers in using kerosene in clocks, with all the letters we have received.

The cabinet looks dandy. How about it, readers, do you want the plans?

Dear Mr. Hedden:

The pool table you ran in several issues last year was a beauty, but I can't quite handle a project that size. Are pool tables available in kit form?

G. L. S., San Francisco, Calif.

Dear Mr. G. L. S.:

Pool tables in kit form are available from Rochester Bowling Supply Co., 500 Lyell Ave., Rochester 6, New York. Kits are complete with cues, balls, etc. Suggest you write direct for full information.

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2729 S. Mary Street, Chicago 8, Illinois**

Rush giant new Craftsman WOOD Catalog. I enclose 25c to cover mailing cost.

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Address _____

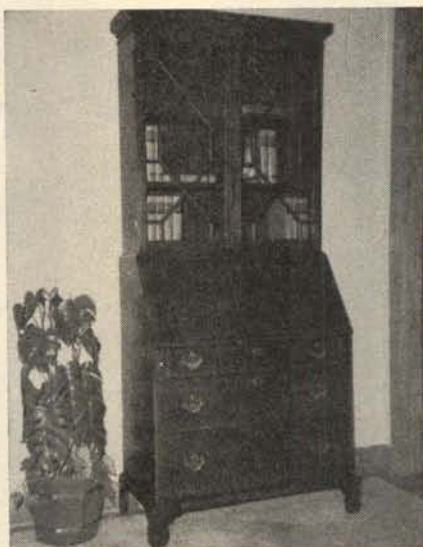
City _____ Zone _____ State _____

Dear Mr. Hedden:

I want to thank you and all the many wonderful people from all over the country for the warm, friendly letters I have received since the picture of my grandfather clock and spinning wheel appeared in WORKBENCH.

Am enclosing a picture of a colonial secretary I just finished for my wife's Christmas, (1963), present. Started in July, used all mahogany with brass colonial hardware, plus adding many enjoyable hours of work.

Andy Rorer, 904 King St., Burlington, N. C.



Dear Mr. Rorer:

We certainly are pleased to hear that so many people have written you. All our readers are members of the friendly fraternity of craftsmen who enjoy creating beautiful things. They also enjoy meeting, talking to and corresponding with, other members of the fraternity.

Dear Mr. Hedden:

In the March-April issue in the article about the clavichord it is shown and stated that there are 12 keys to the octave. I thought there were only 8; the word octave means 8.

C. R. S., Kansas City, Kansas.

Dear Mrs. C. R. S.:

Yes, there are 8 notes to an octave, but there are 12 keys to cover this range. Actually only seven of the natural, (white), keys are counted along with 5 black, (sharp), keys to make the 12. The eighth key is the beginning of the next octave. Thus, if you play C and C, then move to the next octave, you play one of the Cs again.

Dear Mr. Hedden:

Want to resilver some mirrors, as described in the March-April, 1963 issue, but am having trouble getting the chemicals locally. Do you have a source?

J. L. L., Independence, Mo.

Dear Mr. J. L. L.:

Several of our readers have written us regarding this problem. In most cases a druggist either has the chemicals in stock, or can order them for you.

Nitric acid, ammonium hydroxide and potassium hydroxide are put up in 1-lb. bottles—the minimum amount as sold by chemical-supply houses. A 1-oz. bottle of stannous chloride and a 16-oz. bottle of silver nitrate also are *minimum* quantities. This amount of silver nitrate will be enough for about 1,200 sq. in. of silvering on glass—or ten 10 x 12 panes.

Acids are not mailable but are sent by express, so you will have to pay the express costs. Persons living in large cities can obtain the chemicals directly from chemical-supply houses. In other cases the science teacher in your local school may help you order the necessary materials.

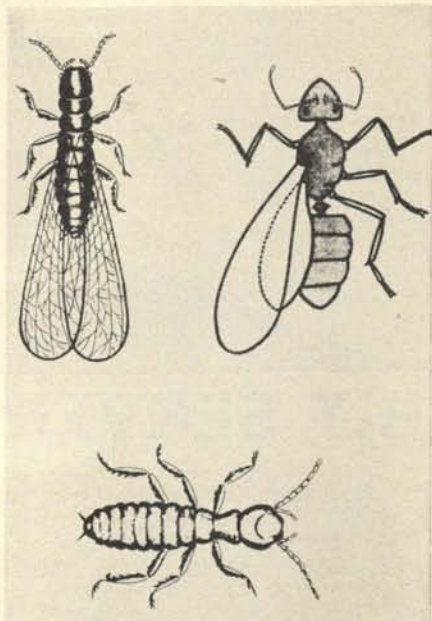
In all cases, explain how you are going to neutralize the various acids and dispose of them. Also, explain that you are aware of the explosive qualities of some of the mixtures and that they will be discarded after using, and not stored to become a hazard. Many druggists, with good reason, are hesitant to sell some of the chemicals because of the dangers involved in their use.

We have just recently been informed of the passing away of Richard (Dick) Hutchinson at age 76 in March of last year. Born in New York, Dick had lived in San Gabriel, Calif. for the last 17 years. We have published many of Dick's articles over the years, and considered him a friend, although we never met him personally. We know the readers of WORKBENCH and other do-it-yourself publications will miss his byline and his very interesting and informative articles.

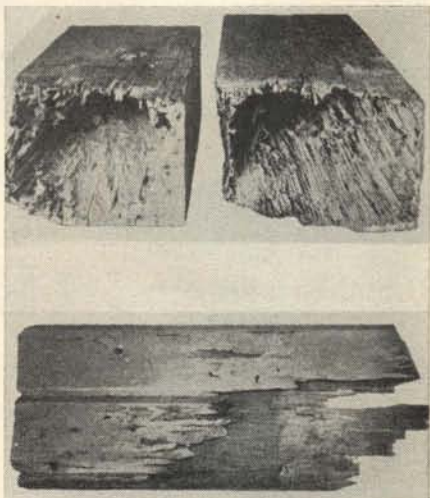
Jay W. Hedden

Termite Control

Termites are active all year around, but they swarm only in early spring. The "reproductives" that lay eggs and start new colonies are black or brown with whitish wings. They differ from flying ants in that they do not have "pinched-in" waists that ants have.

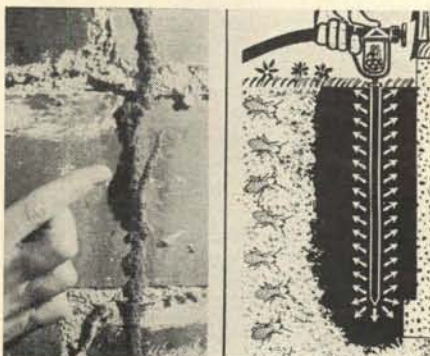


Difference between winged termite, left, and ant is that termite has thicker waist. Worker, below, does damage.



Examples of damage done by workers that are spawned by winged termites is shown above. Beams are hollow.

If you see flying termites, look for evidence that the wingless workers are attacking your home. Termites must return to the soil every 24 hrs., and cannot stand exposure, so they build mud tunnels from the soil to wood. Injecting chlordane in the soil will eliminate these destructive pests. For information on do-it-yourself treatment of the soil around your home: Ross Insecticides, Inc., 115 S. W. 8th Street, Des Moines, Iowa. Δ Δ



Termites build tubes of mud to permit them to travel to wood without being exposed. Note action of Soil Injector.

Town of 150 Population Supports Profitable Saw Sharpening Business

Dick and Jo Ann Koester sharpening hand and circular saws with their two Foley Saw Filers



They started in spare time with one

FOLEY SAW FILER

The Koesters started sharpening saws in spare time with a Foley Saw Filer, Retooler and Setter. Here's the story in their own words, 10 months later: "We have acquired another Foley Saw Filer and for the past two months we have been in full-time operation. As we live in a small town of 150 population in farm area we use our truck to pick up saws in five nearby towns. With a family to support and plans for building to our house we had to pick up business fast and already sharpen an average of 15-20 saws a day. Business for the future looks even better as good machine filing is our best advertising."

Dick and Jo Ann Koester, Koester's Korner

FREE BOOK "MONEY MAKING FACTS" shows just how you can start at home in spare time and sharpen hand, band and circular saws with the Foley Saw Filer. Small investment—time payments if desired. Get this booklet—study it! Send coupon today. No salesman will call on you.

FOLEY MFG. CO. 540-4 Foley Bldg. Minneapolis 18, Minn.

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Name _____

Address _____



MY SPARE TIME HOBBY MAKES ME \$5⁰⁰ an hour CASH PROFIT

—Grover Squires



START YOUR OWN SPARE TIME BUSINESS



You can turn your spare time into Big Cash Profits with your own **COMPLETE SHARPENING SHOP**...Grind saws, knives, scissors, skates, lawn mower blades...all cutting edges. Your Own Cash Business with no inventory...right at home...no experience needed.

FREE BOOK tells how you can start your own spare time business while you are still working at your regular job. Low Cost—time payments only \$15.00 a month. Send coupon today.

BELSAW Sharp-All Co., 7504 Field Bldg.,
Kansas City 11, Mo.
Send **FREE** Book "LIFETIME SECURITY."
No obligation.

Name _____
Address _____
City _____ State _____



FED UP with THIS?

DRAWERS ROLL OPEN to Full Extension at a Touch...



ROLLER BEARINGS FOR WOODEN DRAWERS

Tired of tugging at drawers that stick—especially in hot, damp weather? Why break your back when amazing Roll-eez Set "A" costs so little, makes any drawer so easy to work you'd think it operates by magic! Ideal for furniture, built-ins. Eliminates wood-to-wood contact, prevents wobbling. Made with **NYLON** rollers mounted on steel frames. Simple to install. Long lasting. Used by cabinetmakers. Each drawer set includes instructions, nails. At hdwe., bldg. supply dealers.

Action Compares with Costly Slides
Rear View
Nail two Roll-eez "N" on rail at drawer opening. If drawer has center guide, nail third Roll-eez "N" on top of back in the middle. Roll-eez "M" on bottom straddling guide.

49¢
Set for One Drawer



DEALERS WRITE

Building? Remodeling? Insist kitchen cabinets have Roll-eez.

JUNIOR-PRO PRODUCTS CO., Dept. W
118 E. MARCEAU ST., ST. LOUIS 11, MO.

NOW! MOTOR SCOOT'R-BIKE EASY TO BUILD FROM 26" BICYCLE FRAME

BIGGER, BETTER THAN A MINI-BIKE

SAVE \$50 TO \$100

Convert old bicycle frame for as little as \$4.95, plus small welding job. Step-by-step **PLANS**, photos show you how. **PLANS**, \$2.00 (refundable). Wheels, clutches, kits at **Factory Discount Prices**. Order Plans today. Gilliom Mfg. Co., Dept. WB-5, St. Charles, Mo.

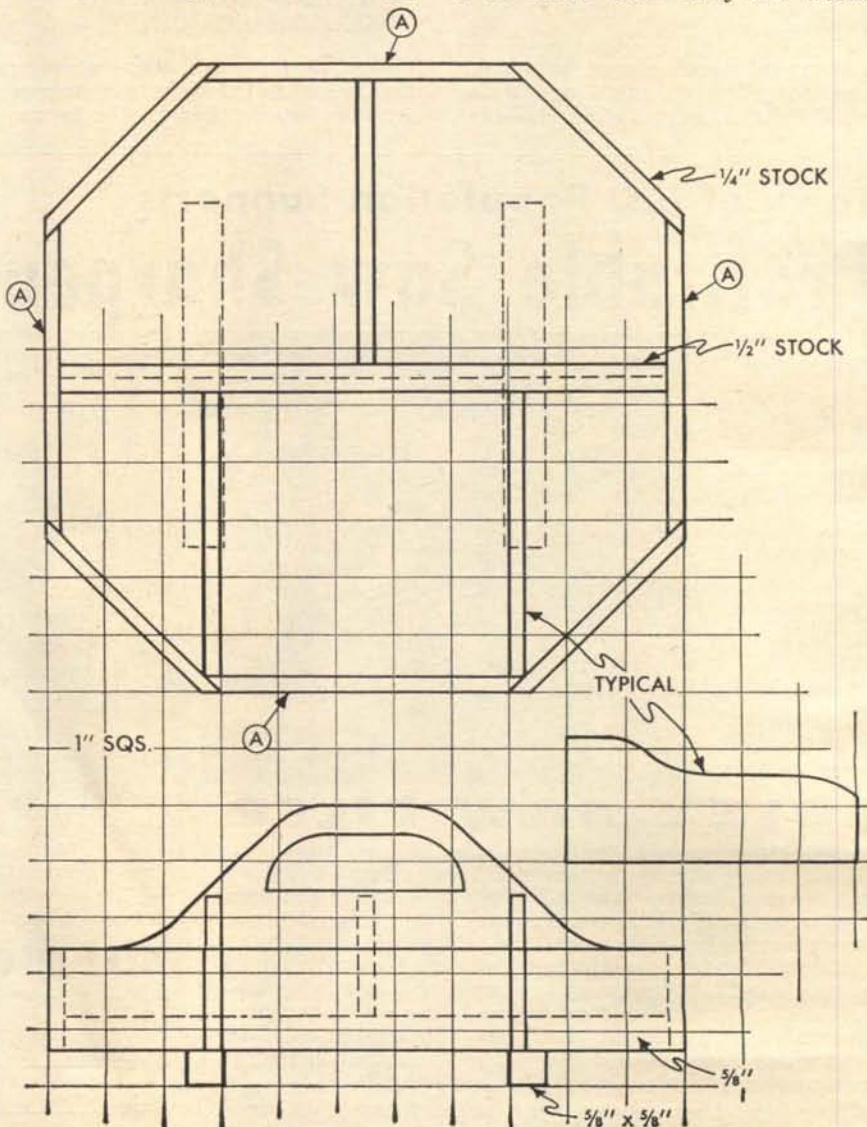


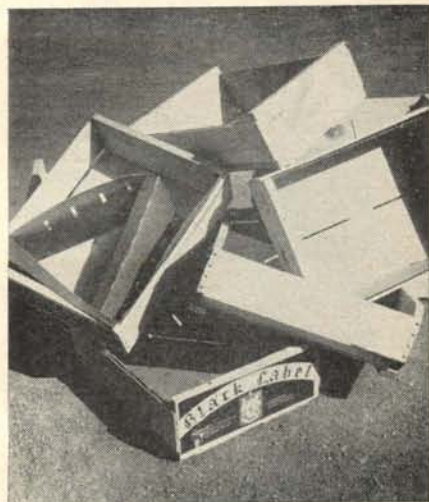
(Hand-Tool Project)

TIDBIT SERVER

Only hand tools are required for building this attractive and useful tidbit server. You can use scraps

salvaged from fruit crates can be used. Some stores will give away the crates, others will charge 10 or 15 cents each. They are worth

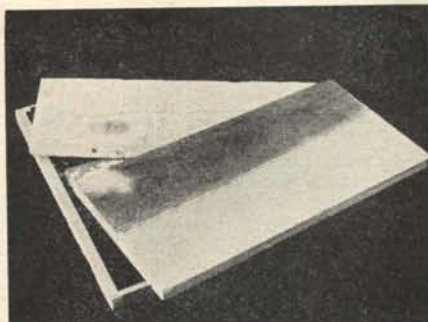




Wood salvaged from these fruit crates was enough to make six different projects, with enough left to make more.

the price if only for the $\frac{1}{4}$ -in. stock in the crates; a thickness few lumberyards handle.

And the wood is good; we have salvaged some pretty good pine from such crates. Material thick-



Unfinished surfaces can be smoothed with hand plane. Plane across grain, then with grain. Finish by sanding.

ness ranges from $\frac{1}{8}$ in. to $\frac{3}{4}$ in., and widths run from about 2 in. up to as much as 9 in. Do not try to make the wood look like prime mahogany or walnut; the grain is wrong and dark stains seem to cheapen a project. Light driftwood stains work out well, as do maples, but stay away from red maple. A clear finish also is good, as is paint; in the latter case sand carefully and use a sealer first. Be careful when you take the crates apart; tap gently to force the nails loose, then pull them out. The holes can



Two pieces that form bottom of the tray are edge-glued and held together with cleats that also act as legs.

be cut off, or filled and sealed.

The server utilizes two crate ends for the bottom, held together with cleats that double as legs. Add the sides next, using brads and glue to assemble. Attach the pieces marked "A" on the drawing; if you cut them a little long, you will be able to sand the ends just right after they are attached. Follow the same procedure for the remaining pieces. Glue and brads are used for the center partition-handle, while the other dividers are attached with glue only. $\Delta \Delta$

FREE FROM MASONITE

How to surround yourself with beauty and comfort

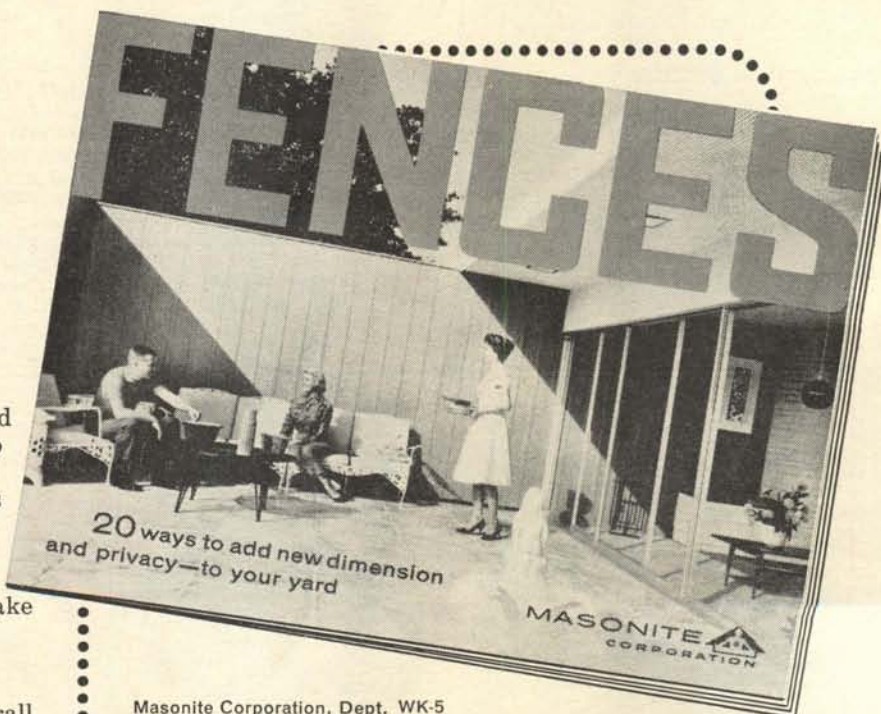
Want more privacy?...a convenient windbreak...more attractive landscape? Your copy of "Fences" shows how these benefits can be yours. Twenty pictures and sketches offer a style show of fences, patio walls and screens. You also get important construction hints, learn how easily fences and partitions can be built. The secret is Masonite hardboard panels. Example: Masonite X-ninety panels—grain free for maximum workability, surface primed to take and hold paint beautifully, dent resistant for years of good looks. Or try new Weatherall, the general purpose, utility panel for almost any outdoor job. Weatherall features a baked-in primer, can actually go unpainted as long as a year. More information? Send for "Fences" today.



MASONITE

shows the way!

Masonite, X-ninety and Weatherall are registered trademarks of Masonite Corporation.



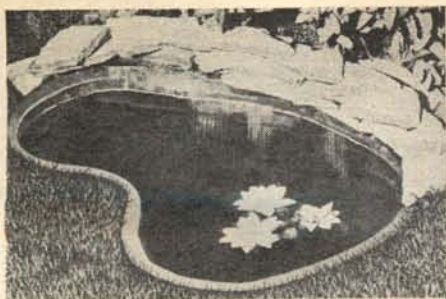
Masonite Corporation, Dept. WK-5
Box 777, Chicago 90, Illinois

I'd like to know more about fence design and Masonite panels for easy construction. Send my copy of "Fences."

Name _____

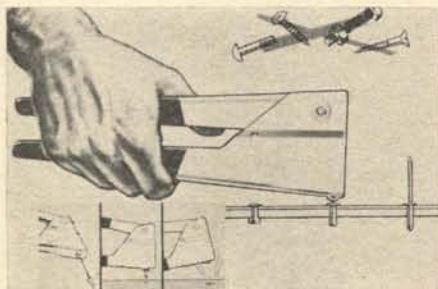
Address _____

City _____ County _____ Zone _____ State _____



Outdoor Garden Pool . . . \$3.98

Beautify your garden with this one-piece sunken garden pool for live goldfish and exotic water lilies. One water tight piece of aqua colored Polypropylene. Easily installed. Ideal garden size 3'5" x 2'3" x 8" deep at ground level. Recessed water lily pot holds 1 to 3 bulbs. \$3.98 complete or 2 for \$7.65. Water Lily Bulb Free with each pool. C.O.D. postage extra. Cash orders add 50c shipped ppd. Michigan Bulb. Co., Dept. BP-1608, Grand Rapids, Mich. 49502.



Set Rivets With A Squeeze

RiveTool, a brand new tool for the home or workshop, is ready to handle all sorts of fastening jobs quicker, easier, better than ever before. Use rivets instead of nuts, bolts, screws. Hundreds of uses . . . ideal for difficult blind fastening. Kit contains the all-steel 12" RiveTool, a supply of Rivets, and instructions. RiveTool Kit \$5.95 postpaid, Extra Rivets \$1.00 postpaid. Deerskin Trading Post, Rt. 1 at 1142B, Danvers, Massachusetts.



Septic Tank Trouble?

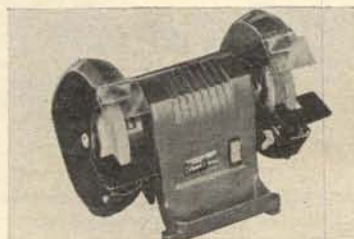
Homeowners—This company has a non-poisonous bacterial compound that works to keep septic tank and cesspool clean, will prevent overflow, back-up and odors. Regular use of this compound can save costly pumping or digging. It is easy to use. Money back guarantee of satisfaction. A six months' supply, \$2.95, or a full year's supply for only \$5.50, postpaid. Northel Distributors, WM-5, P. O. Box 1103, Minneapolis, Minnesota 55440.

Shoppers'

NEW, NON-WIPING STAIN can be applied by brush, roller or spray, is said to provide uniform color on porous and poorly sanded wood. Will adhere to lightly primed surface. In walnut, pecan (fruitwood), old pine, softone, cherry-maple, brown birch and light maple. Seven 1 x 8-in. color panels, instructions and catalog, \$1. No-Wipe stain is priced from 90 cents a pint. Gaston Finishes, P. O. Box 1246, Bloomington, Ind.



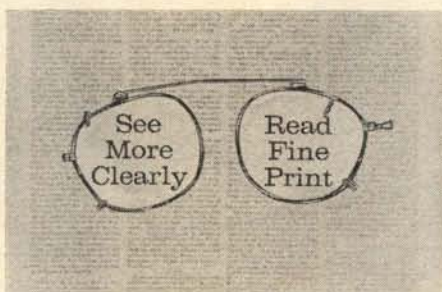
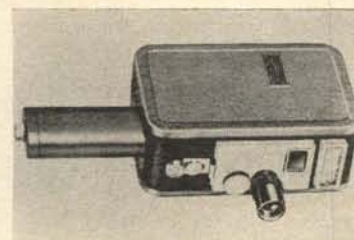
UTILITY BENCH GRINDER is designed for the home workshop and light industrial shop. Motor is enclosed to protect it from dust and debris, while two internal fans and air louvers keep it running cool. Tool rests adjust easily for wheel wear or grinding angle. Unit has sliding switch, two transparent eye shields, fine and coarse 5-in. wheels. \$24.95, Portable Electric Tools, 1200 E. State St., Geneva, Ill. or at your local dealer.



ONE OF THREE new riding mowers in line, "Emperor Deluxe" has 6 h.p. engine, can be fitted with 26 or 32-in. rotary mower. Rear-mounted engine assures maximum traction; mower will climb 70 per cent grades. Fingertip gearshift has four forward speeds and reverse. Snow plow, leaf mulcher and other attachments can be towed. For complete information, including full-color literature, write Ariens Co., Brillion, Wis.

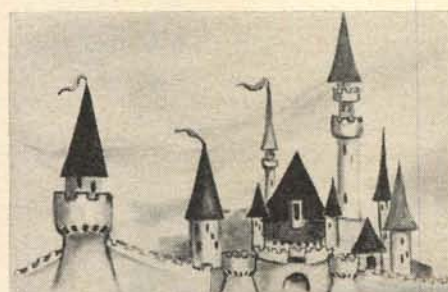


LOW-COST 8MM MOVIE CAMERA is electrically powered, runs on two dry cells that are readily available, (penlight cells). Lens has fixed focus, fitted with two-setting shutter, for dark and bright-light conditions. Standard 8mm black and white or color film is used. Camera housing is steel with leather accents; comes gift-boxed. Price is just \$12 plus \$1.75 import duty when delivered. Reynolds Co., Dept. WB, Box 7045, San Diego, Calif. 92107.



Slip-On Magnifiers

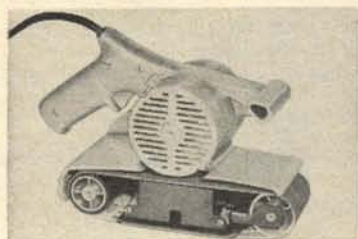
Having trouble seeing fine print and close detail work? Slip these magnifiers on your glasses and See Clearer Instantly! Powerful 2½ diopter lenses. Fits all glasses. Low \$3.98 postpaid price saves you at least 25% over usual price. State age, and whether male or female. Money-back guarantee. If not completely satisfied, return postpaid within 30 days for full refund. Nel-King Products, Inc., Dept. WB-54S, 811 Wyandotte, Kansas City, Mo. 64105.



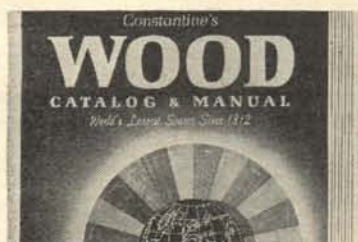
Make Your Home A Castle

At Little Cost—by doing it yourself. It's so easy to make your own home repairs and furniture projects with the clear, step-by-step directions you'll find in Workbench Magazine. Pre-tested plans save your time and money. Now—for a limited time only—receive 10 months (five issues) of WORKBENCH for only \$1—regular price \$2 yearly. Send only \$1 to Workbench, 543 Westport Rd., Kansas City, Missouri 64111.

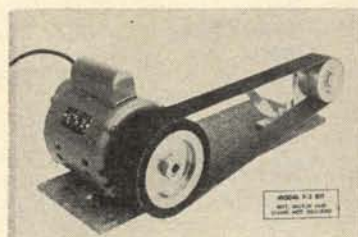
Showcase



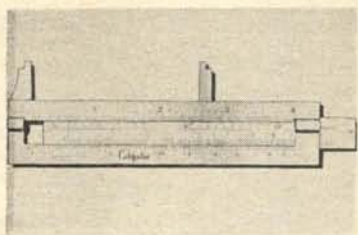
BUILT-IN DUST PICKUP is feature of new 3-in. belt sander that manufacturer says is first "dustless" unit to sell for under \$70. Dust pickup mechanism on Model 595 is flat-face design, allowing flush sanding in corners and against walls. Model 594, without dust pickup, is 8 oz. lighter at 9½ lbs., more compact, is priced under \$60. For more information write to the Skil Corp., 5033 Elston Ave., Chicago 30, Ill.



LATEST AND MOST ELABORATE publication ever released by the 152-year-old firm, the new Constantine's "Wood Catalog and Manual" is completely revised and restyled for easier use. Over 2,000 items from rare, imported woods to baby-crib hardware and musical chimes are shown for the first time. Copies of the catalog are 25 cents from Albert Constantine and Son, Inc., 2050 Eastchester Rd., Bronx, N. Y. 10461.



CONVERT ANY MOTOR or bench grinder to handle abrasive belts for sanding, polishing, grinding, burring, or chamfering. Uses belts readily available from hardware stores. Simple to install, foolproof to operate, easy to change belts. Kit includes rubber contact wheel, backstand idler pulley, belt tensioner and tracking assembly, and motor adapter. \$19.95, Lea Mfg. Co., 16 Cherry Ave., Waterbury 20, Conn. Price includes postage.



MEASURING DEVICE and slide rule are combined in this one instrument. You can measure inside and outside dimensions up to 4 in., reading directly from scales. Lathe r.p.m., volume or surface areas of cylindrical bodies and circumferences are made with one setting. Calculations of standard slide rule are available on C and D scales. Complete with vinyl case, \$5.95 each from Amtronix, Inc., P. O. Box 44, Chula Vista, Calif.



End Bed Wetting Problems

Prevent embarrassment—protect against unhealthy wet bedding with perfect-fitting Staydry Panties of plastic-covered highly absorbent material. Ideal for adult incontinents. Infants: to 18 lbs., \$1.69; to 25 lbs., \$1.98; to 30 lbs., \$2.49. Child & Adult Waist Sizes: 18-20, \$3.49; 22-24, \$3.98; 26-28, \$4.98; 30-32, \$5.98; 34-36, \$6.98. Satis. guar. or money back if returned ppd. in 30 days. Nel-King Products, Inc., Dept. WB-54P, 811 Wyandotte, Kansas City, Mo. 64105.



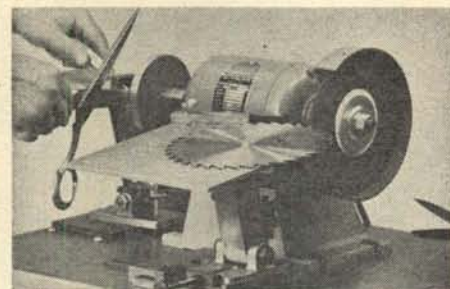
Cedar Closet Coater.

Now everyone can have a cedar scented closet for a fraction of the cost of cedar wood. Cedar-Scent closet coater contains more cedar oil than cedar wood and can be applied with a brush or trowel. One 5 lb. can mixed with water will cover the average closet. Send \$7.95 M. O. or check for one 5 lb. can or \$29.95 for case of 4 cans. Shipped prepaid. Manufactured Products Co., Dept. 465, 2332 S. 14th St., Kansas City, Kansas 66103.



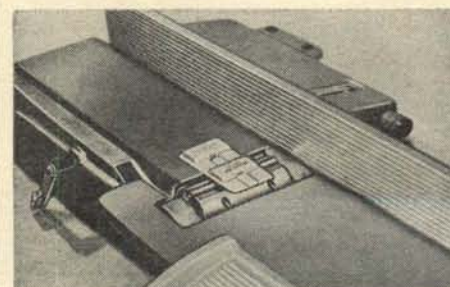
Heatform—

A double walled metal unit with air chambers surrounding the firebox and upper throat, captures and circulates heat lost up the chimney by the ordinary fireplace. Complete unit, hearth to flue, perfect guide for masonry walls of a fireplace, eliminating construction errors and smoke trouble. Write for complete "do-it-yourself" literature. Superior Fireplace Co., Dept. W-H, 4325 Artesia Ave., Fullerton, Calif., or Dept. W-H, 601 N. Point Rd., Baltimore 6, Md.



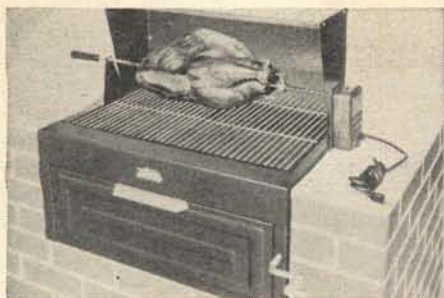
Sharpener Turns Time Into Cash

Make as much as \$6.00 per hour part or full time. Sharpen knives, scissors, pinking shears, saws, clippers, planer blades and tools for neighbors, stores, hospitals, barbers, etc. Turn out professional hollow-ground work. Thousands in use, be your own boss! Complete manual, signs, etc. to help you. Start for as little as \$34.95 factory-to-you. Write for free booklet, "The Turning Point in Your Life." Treyco Products, 384 Old Falls Blvd., N. Tonawanda, N. Y.



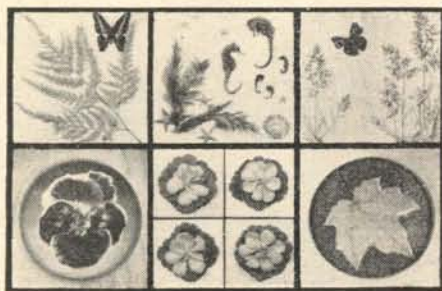
Knife-Setting Problems?

Magna-Set eliminates Jointer and Planer knife-setting problems... Magnetic attraction makes the job fast and exact. Use one unit for machines up to 8 inches—larger machines need one unit for each 6 inches of knife length. Two precision-made models: J-7 for Jointer-Planers @ \$6.50 each, JP-3 for Thickness Planers @ \$12.95 each. If not at your dealer, write: Magna-Set Company, Dept. C-2, 632 New Haven Ave., Milford, Conn. 06460.



Feastmaster Barbecues

For indoor and outdoor use. Completely assembled, ready to slip into any prepared masonry opening. Easily removed for cleaning or storage. Turn of the crank raises or lowers fuel container. Three models, pit, oven and cabinet style. Electric motor, spits and draft hood available for all models. Write for complete construction information. Superior Fireplace Co., Dept. W-B, 601 N. Point Rd., Baltimore 6, Md., or Dept. W-B, 4325 Artesia Ave., Fullerton, Calif.



Make Your Own Nature And Art Tiles

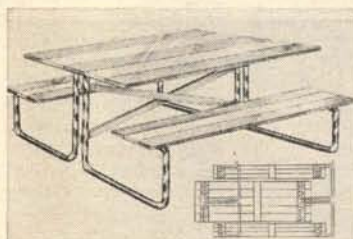
With embedments of colorful leaves, flowers, butterflies, art objects, travel mementos all permanently protected and preserved. These 4½-inch tiles are the same size as standard ceramic and plastic tiles, we supply the inexpensive molds. Use them in your kitchen or bathroom, or make trays, table tiles, many other decorative accessories. Requires no heat. For illustrated directions, mail 25¢ to Dept. G-9, The Castolite Company, Woodstock, Illinois.



Slides Screen Shut Automatically!

Who shuts the sliding screen door after you when your hands are full? After the kids when they just plain forget? Not who... but what... and the answer is Sli-Clo, revolutionary new automatic sliding screen door closer. Opens easily... closes quietly. Helps keep sliding screen on track! Easy to install with full instructions enclosed. \$12.95 ppd. Money-back guar. Sli-Clo Div. of McGraw & Distributing Co., 1489 S. Broadway, Denver, Colo.

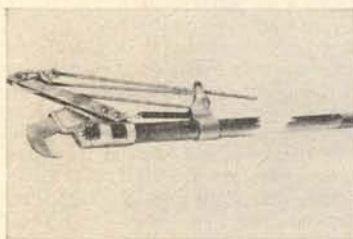
SHOPPERS' SHOWCASE



PICNIC-TABLE FRAME, Model PT 70, is newest in the Gerber line of do-it-yourself projects. Using metal frame, "candy-striped" in green and white metalescent enamel, you cut and fit wooden table top and seats, thus keep down cost. Exclusive X-frame construction makes table rigid, yet it folds easily. Price is \$11.95. For name of nearest dealer: Gerber Wrought Iron Products, Inc., 1510 Fairview Ave., St. Louis 32, Mo.



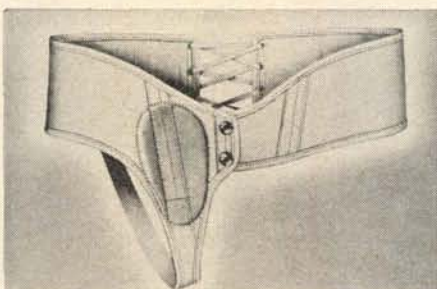
SANDBLASTING inside a cabinet is the solution to doing this work in confined area. Used abrasives fall through perforated metal floor into a hopper and are used over and over. Sandblasting is used to clean auto parts, waffle irons, gas-range burners, metal antiques and other items. Ask for folder on Abrasive Blast Cabinet, Model SB-1, by writing to Inland Mfg. Co., Dept. SB-W, 1108 Jackson St., Omaha, Nebr., 68102.



HEAVY-DUTY TRIMMER once sold only to park departments, public utilities and tree experts, now available to the public. Ball-bearing pulley system gives compound leverage, permits cutting branches to 1 in. diameter 15 ft. high. Pruning-saw attachment available. Trimmer is \$16.45, pruning attachment is \$5.45, additional 4-ft. extension, \$3.85 ppd. Roycraft Industries, Dept. WB, 226 W. 39th St., Kansas City, Mo., 64111.



ALL-TRANSISTOR STEREO Receiver AR-13 is first of its kind in kit form. Compact unit houses two 20-watt power amplifiers, two separate preamps, plus wide-band AM, FM and FM Stereo tuner. All the electronics necessary for a complete music system are engineered into this unit. Just add two speakers and a phonograph or tape recorder. In a beautiful walnut cabinet. Price is just \$195 from Heathkit, Benton Harbor, Mich.



Patented Rupture-Easer®

No fitting required. A strong, form-fitting washable support for reducible inguinal hernia. Back lacing adjustable. Snaps up front. Adjustable leg strap. Soft, flat groin pad. No steel or leather bands. For men, women, children. Send measurement around the lowest part of abdomen and state right, left side or double. Single models, \$4.95; double models, \$5.95. Add 25¢ postage. Piper Brace, Dept. WB-54, 811 Wyandotte, Kansas City, Mo. 64105.



Flower Show Tags

New show tags for 1964 are ideal for all types of flower shows. These attractive tags designed especially for Flower and Garden Magazine, include division, class and variety, with concealed name of entrant and space for judges' decision. Order now for spring shows. Send just \$1.50 handling charge for each 500 tags to Flower and Garden Show Tags, 543 Westport Road, Kansas City, Missouri 64111. Allow two weeks for delivery.

Book and Booklet Reviews

WAYS TO DECORATE AND REPAIR

Booklet 2857
Dept. DC, Borden Chemical Co.
350 Madison Ave., New York,
N. Y., 10017

Free for stamped, self-addressed envelope. Full-color, 12-page fold-out booklet describes many uses for Mystic Plastic Coated Cloth Tape. It can be used for matting pictures, for highlighting areas of a room, making monograms on headboards and dressers, labeling drawers and for color-coding family napkin rings and luggage. The tape can be used to patch torn plastic seat covers, and to repair broken tools and sports equipment.

BRIGHT IDEAS

General Electric
Schenectady 5, New York
Free on request

20-page booklet contains helpful information on remote-control wiring, electric heating, silent mercury switches, brightness controls, night lights and other useful products. If you are going to build a new home, remodel an old one, or just add a room to your house, some of the information will be of interest.

FINISHING DOUGLAS FIR &
OTHER SOFTWOOD PLYWOODS
Douglas Fir Plywood Association,
1119 A Street, Tacoma, Wash.
98401, 35 cents.

Most home craftsmen use plywood for many jobs; very few know the proper finishes to apply, and the correct method of applying the finishes. This booklet gives detailed information on applying the various finishes, ranging from paint to stain and toned sealers. Life of a particular finish is described, and how to prepare a plywood surface for refinishing when that is necessary. An excellent reference for any craftsman, amateur or professional, who uses plywood and wants to apply a finish that fits a situation, and that will last the longest.

LATEST AND BEST METHODS
OF REFINISHING
Wilson-Imperial Co.,
115 Chestnut St.,
Newark 5, N. J., 25 cents

New, revised edition of this illustrated refinishing guide gives instructions on paint removing, and refinishing of interior trim, floors and furniture. Also described are the removal of wallpaper, cleaning of new wood, care of paintbrushes.

ESSENTIALS OF MODERN UPHOLSTERY

By Herbert Bast
Bruce Publishing Co.,
400 N. Broadway, Milwaukee, Wis.,
53201. \$3.75.

Already adopted as a teaching text by several schools, this new book has more than 200 illustrations, which makes it completely non-technical. Even a novice can readily understand the information given and use it in a practical manner.

This is the best book we have ever reviewed on the art of upholstery, and highly recommend it to anyone interested in learning this skill. The book is divided into four parts: The first part deals in tools, equipment and supplies, the second section explains techniques and materials. The third part presents eight typical jobs, relating them to the information given in the first two parts. The final portion contains information on the source and manufacture of materials essential to upholsterers, including the most modern products of vinyl and foam rubber.

An extremely well done book by a man who worked in the industry, then taught for a number of years.

GETTING STARTED IN ELECTRONICS

Allied Radio Corp.,
100 N. Western Ave.,
Chicago 11, Ill., 60680. 50c ppd.

Written for the interested beginner in electronics, this book explains in simple terms electron theory, resistance, magnetism, capacitance, inductance, reactance, stages of radio and the function of various tubes, semiconductors and basic components. Also included is information on AM and FM radio, TV, VHF, UHF, Citizens Band and Amateur Radio, kit building and other subjects. The section on construction hints is followed by interesting easy-to-build projects, including a crystal set, walkie-talkie, 1-tube set, transistor set and other electronic devices. Well illustrated.

IN THE NEXT ISSUE . . .

Bedroom Storage Wall
Sheraton Sideboard
Wagon-Seat Chest
All About Wood Bits
Curved Staircase

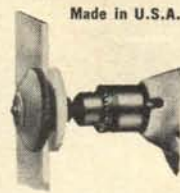
ARCO LAWN MOWER SHARPENER

1/4" SHANK FITS ANY ELECTRIC DRILL

Made in U.S.A.

Lawn Mower Blades must be kept sharp to cut uniform, neatly trimmed lawns. Dull blades chop the grass, leaving bruised and split ends. Arco's specially designed grinding wheel quickly and easily sharpens Rotary Lawn Mower Blades (all makes and models), Roto-Tillers, Moto-Tillers, Sickle Bar Cutters, Hoes, Scythes, Grinding Wheel reversible for double life.....

ONLY
\$1.98



SHOP-KING HEDGE-TRIMMER



FITS ANY ELECTRIC DRILL

Cuts, trims and shapes hedges and shrubbery faster and neater than hand shears. Extra long 14" Blade, of hardened tool steel, cuts wide areas faster. Long handle locks at 10 angles for most convenient use. Lightweight . . . Ideal for women. Steel Gear Drive. Made in U.S.A. \$12.95 list. No. 5000—Special Price

ONLY
\$7.88

ARCO EXCLUSIVE! EVERY ELECTRIC DRILL A BEVEL CUTTER & RADIUS CUTTER

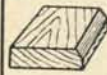


Adjusts
from 1/32"
to 5/16"
wide bevels

NOW FOR THE FIRST TIME you can do corner beveling and corner rounding with ANY ELECTRIC DRILL, drill press. Simply slip Arco Adjustable Bevel-Cutter or Radius-Cutter in drill chuck and it's ready to work! Special Dual Guides assure accurate cuts along entire length and width of workpiece. Cuts wood, plastics, soft metals. Quality made in U.S.A. of hardened steel.



Avail. in
3 sizes



Makes
Fast, Clean,
Accurate
Cuts



No. 10 Adjustable Bevel-Cutter, cuts 45° bevels from 1/32" to 5/16" wide. \$1.98
No. 16 Radius-Cutter, for 1/8" radius. \$1.49
No. 17 Radius-Cutter, for 3/16" radius. \$1.49
No. 18 Radius-Cutter, for 1/4" radius. \$1.49
SPECIAL! Save by buying set of 4 tools. No. 15, Set of 4. ONLY \$5.75

ARCO ROTO-FORM



SHAPES
CUTS
FORMS
MILLS

Fits any electric drill, drill press. Saves hours of work shaping contours, removing paint, planing, sanding, beveling, model making. Cuts woods, metals, plastics, wallboard, etc. Quality-made in U.S.A. of hardened steel. Never clogs or needs sharpening. 1 1/8" diameter with 1/4" shank. Terrific Value. No. 1252.

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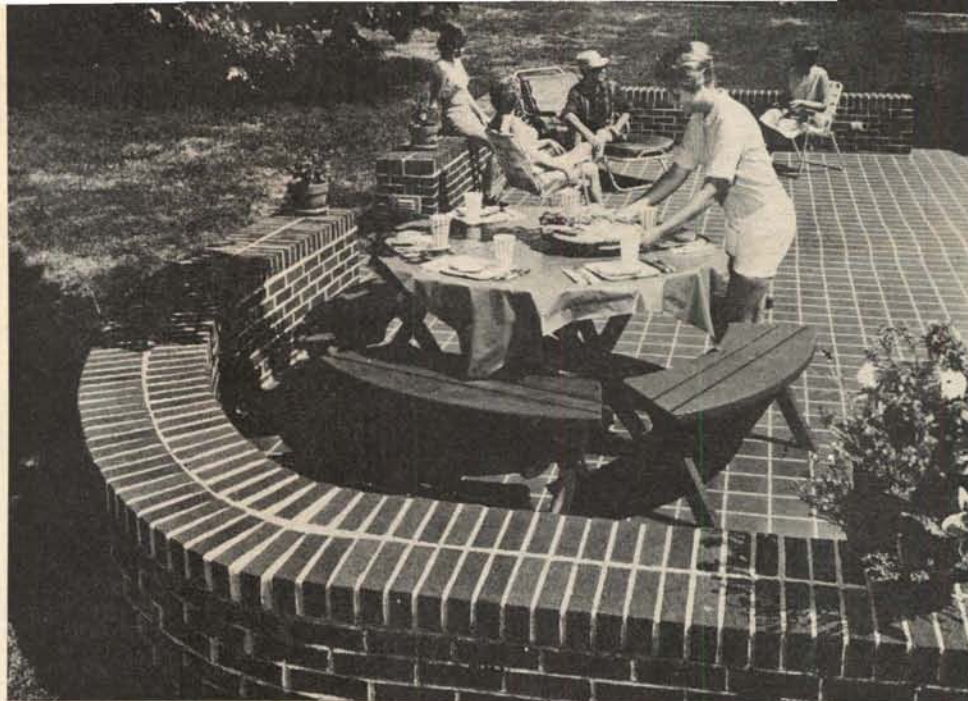
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ARCO TOOLS, INC.

Dept. WB-5, 421 W. 203 St., N.Y. 34, N.Y.

Brick walls and tiled floor of this patio create a genuine outdoor living room.



CERAMIC-TILED PATIO

Concrete is the favored material for patios because it can be poured in almost any shape, and it does produce a smooth, hard surface that is extremely weather-resistant. There is little beauty, however, in the neutral-gray color of the material.

One home owner had twice extended the original small patio, Fig. 3, installed by the builder of

the home. The resulting patio was of ample size, but the large expanse of gray was somewhat cheerless, and there was the problem of installing lighting.

The solution was to first build a brick wall, Figs. 1 and 2. Two courses of brick were used, spaced so that the length of two bricks exactly spanned the courses. This top row of bricks was placed on

edge, both for appearance and added strength. The double wall permitted installing wiring in conduit, Fig. 1, and locating receptacles at convenient spots along the wall, both on the inside and the outside surfaces. Conduit also was run to the ends of the wall and aisle lights installed to illuminate the openings in the wall that provided access to the walks along the back of the house, and directly to the yard. Storage cabinets, fitted with wooden doors, also were built into the wall, Figs. 7 and 11. Now that the "outdoor living room" had walls and convenient receptacles for powering lights and appliances, the next step was to install a "floor." In this case it was ceramic tile, a material that is unsurpassed for this kind of installation. Ceramic tile is available in a variety of colors—a red was chosen in this instance, to be compatible with the brick—the color running completely through the material. Ceramic tile is smooth and hard, but various kinds of surfaces are available. The quarry tile used for the patio has an unglazed surface that is not slippery, even when wet. Ceramic tile is highly weather, wear



1. Patio wall is two standard courses of brick, spaced so length of two bricks span them. Note conduit in wall.

and abrasion-resistant. Tiles installed in early Roman cities are still being walked on today. With all these advantages, ceramic tile is beautiful. As can be seen in our cover and lead photo, the contrasting colors of tile and grout, and the straight grout lines, produce a colorful and interesting pattern. The patio now is bright and cheerful both summer and winter.

The tile was installed in a professional manner. First strips of mortar were spread at each end of the patio, the mortar being 3 to 4 in. thick. The thickness allowed for plenty of adjustment in the leveling and pitching of the rows



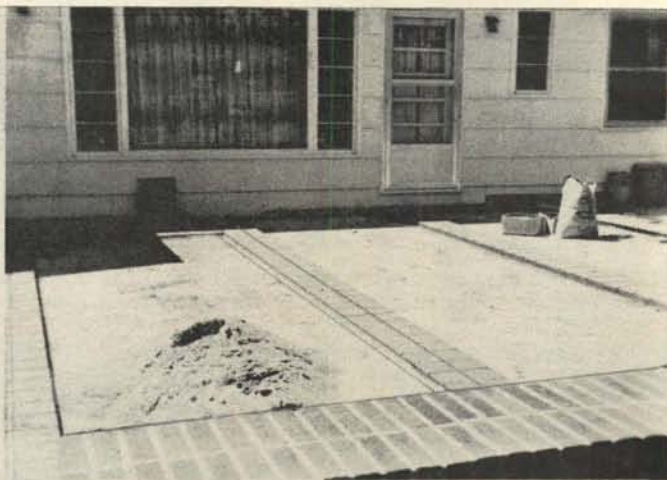
2. With project this extensive, a concrete mixer was used to mix the mortar; mortar box also was used.



3. Apparent here are the joints between the various sections of the patio that were poured at different times.



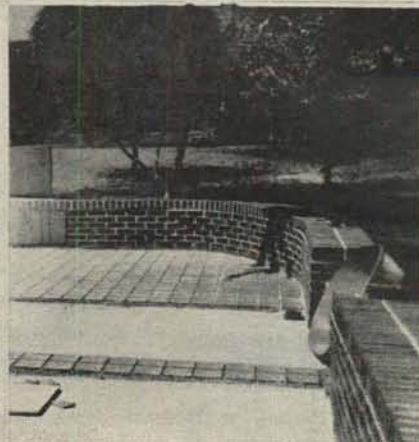
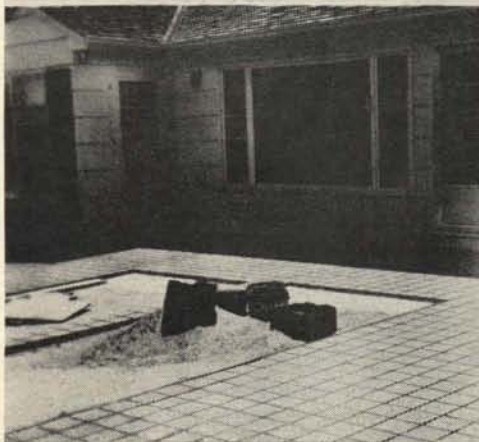
4. Strips of mortar were run at each end of patio, tile laid, then level and pitch determined.

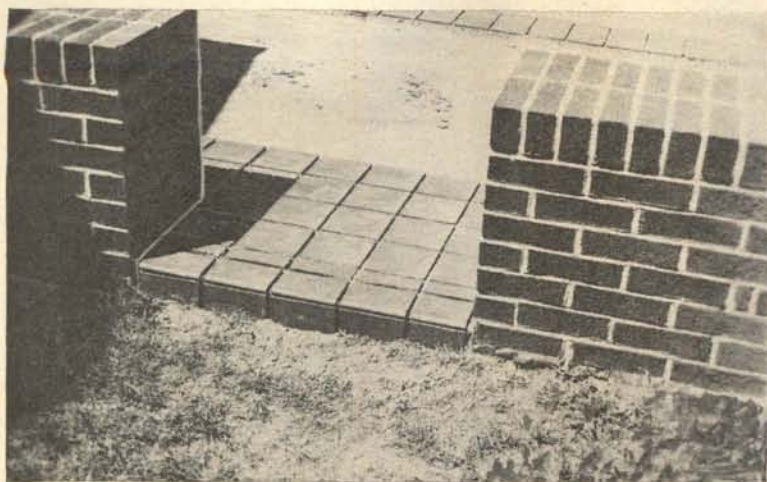


5. Ribbons of tile were laid on the strips of mortar, spaced so rows of full tiles fit between.

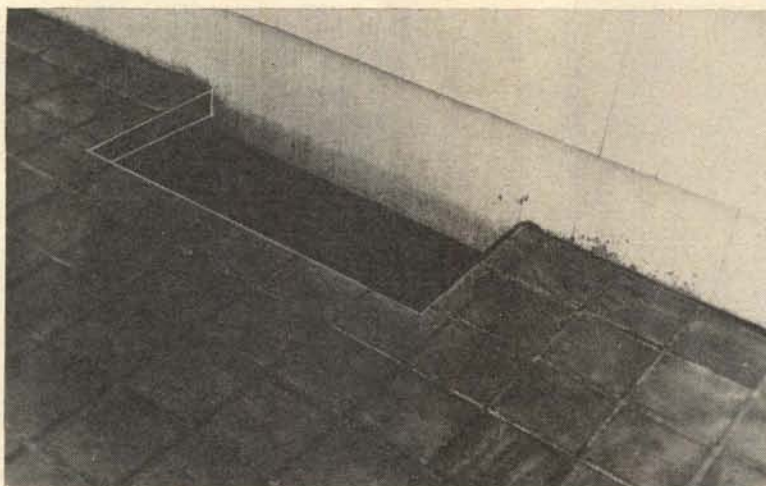
6. Materials for mixing the mortar were stored between the strips of tile to minimize traffic.

7. Spaces between end strips of mortar and tile were next filled in with tile, pitch kept constant.





8. Bull-nose tiles were fitted at edges of openings leading from patio, then tiles were cut to fit between them and tiles already in position.



9. It also was necessary to cut tiles to fit them around window wells. Pitch of patio here was away from the window wells to shed water.



10. Tiles were cut to fit neatly around projecting portions of the house, space being allowed only for full width of a grout joint.

of tiles that then were laid, Fig. 4. The rows of tiles were pitched so water would drain away from the house, and toward the center of the patio. From the center the water drained out one of the openings in the wall and into the yard. The rows of tiles had to be exactly parallel, and spaced so that full tiles, and the correct number of grout lines, would fit between the rows.

When the two end rows were positioned correctly, other lines of mortar and tiles were located between them, Figs. 4 and 5.

Next, mortar was spread and several rows of tiles were laid from the house outward, Figs. 5 and 6. As can be seen in Figs. 9 and 10, quite a bit of cutting and fitting was required. However, no fitting or cutting was required along the straight edge of the patio wall that was opposite the house. The curved portion of the wall, of course, did require fitting and cutting. To assure that only the row of tiles along the house needed the extra work, the width of the patio from the house to the patio wall was accurately measured. It was then determined where the last row of full tiles (also allowing for grout lines), would be positioned in relation to the house. This last row was installed, and several more out from that row. The row against the house then was cut and fitted.

Cutting and fitting of tiles also was required at the openings in the patio wall, Fig. 8. Here bull-nose tiles were positioned at the edge of the concrete patio, then rows of tile were laid from the end row of tiles previously set on the patio out toward the bull nose tiles. The space between the bull nose and the last row of full tiles required cutting and fitting, as indicated in Fig. 8. (Bull nose tiles have one edge that is rounded to produce a soft edge, as on a step.) Tiles also were cut and fitted on the vertical edge of the patio between the bull nose and the earth, Fig. 8.

With the openings in the patio wall tiled, and the strip along the house, as well as the several strips on the patio, the job was finished up by tiling between the various strips, using a straightedge between strips to maintain the proper pitch, Figs. 6, 7 and 11.

After a section of tiles was in place all the tiles were beaten with a hammer and block of wood to assure complete adhesion and contact with the mortar bed. This beating leveled the tiles and moved them to final position. Very coarse sand was used in the mortar, and after it was leveled and pitched, dry cement powder was sprinkled



11. Weatherproof receptacles were located at various points along the wall, and drain holes were made in the first row of bricks when laid.



12. Wide joint between wall and tile can be seen here. Plug on top is for light fixture.

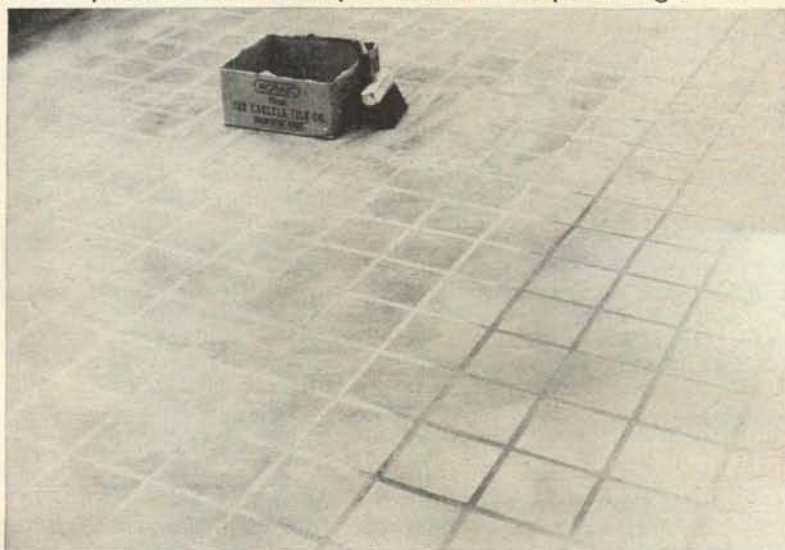
over it. (Producing somewhat the same effect as brushing the backs of the tiles with neat cement paste.) The tiles were set lightly on the mortar base, then aligned in both directions with a straightedge before they were beaten into final position.

Grout then was applied. This soupy mixture was spread over the tiles, then "scrubbed" into the grout lines with folded pieces of burlap, Fig. 13. Each area was gone over several times to make sure the grout was well packed into the joints. As each area began to set, a soft brush was used to "polish" the grout, and to remove excess material, Fig. 14. This last operation also smoothed the grout so it was just slightly below the surfaces of the tiles. This is necessary, as the soft grout does not have the wearing qualities of the hard-baked ceramic tile. The grout joint between the last row of tiles and the patio wall, Fig. 12, is wider than the rest. This allows for expansion and contraction between the wall and the tiles. The excess grout that can be seen on the bricks of the wall in Fig. 12 was later removed by washing with a dilute solution of muriatic (hydrochloric) acid. To assure proper seasoning of the grout and mortar the patio was wet down thoroughly several times a day for a couple of weeks after the job was completed. During the job the tiles and mortar also were wet down thoroughly when work was stopped.

Your patio may not be as large as this one, nor of the same outline, but the walls and especially the ceramic tile will add beauty to any patio no matter what size or shape. △ △



13. Grout is troweled onto surface of tiled patio, then is "scrubbed" into joints with pieces of folded burlap. Joints must be packed tight.



14. When grout has almost set, soft brush is used to sweep up loose particles. When grout is well set, patio is washed down to remove dust.

LIBRARY TABLE

(CIRCA 1720)



For this beautiful example of early Colonial furniture we return to the Wadsworth Atheneum in Hartford, Connecticut. We express our sincere thanks to the Conservator of the Atheneum for his permission to show this example from the Wallace Nutting Collection that was presented to the Atheneum by J. Pierpont Morgan.

You can sense a feeling of the Jacobean period in this library table. However, the carpenters and cabinetmakers of the early years of the colonies possessed neither the skills nor the tools to reproduce the intricate carving and tracery as used on Jacobean pieces. They often worked from memory, and the result is a simplification and straightforward rendering of the European design that establishes it definitely as Early-American.

The turned legs, wide overhangs and the drawers set directly into the apron further establish that the table is of the early Colonial era. While the table is quite large, it will set well in a family room, or a large family-type kitchen such as is growing more popular in modern home construction. On the other hand, you can reduce the size of the table, keeping to scale, and thus retaining the beauty of the design.

The legs are the outstanding feature of the table, and care

should be taken when making the turnings. The upper 9 in. of each leg is $2\frac{1}{8}$ in. square, the round portion just beneath this is slightly less than $2\frac{1}{8}$ in. in diameter. The round portion of the leg, as illustrated, is marked in 1-in. increments so it is quite simple to make a template of the silhouette. Your turning may vary slightly; the main thing is to keep the four legs as close to being identical as you can.

While the top of the original table is one solid piece of walnut, it is impossible to find stock that size in this day and age. It is unusual even for those early times. You can use walnut-faced plywood, if the edge is kept square. This will permit using veneer tape to hide the edge grain of the plywood and provide the appearance of solid lumber. If walnut solid stock is used, rip the material in strips 3 or 4 in. wide, then invert alternate strips when edge-gluing them. The alternating of the grain in this manner assures a minimum problem with warping. If a good sharp planer saw blade is used, the edges of the stock will fit tightly for edge-gluing without the need for planing. Make sure the blade and rip fence of your saw are accurately adjusted. When solid stock is used, the coved profile can be routed on the edge as indicated.

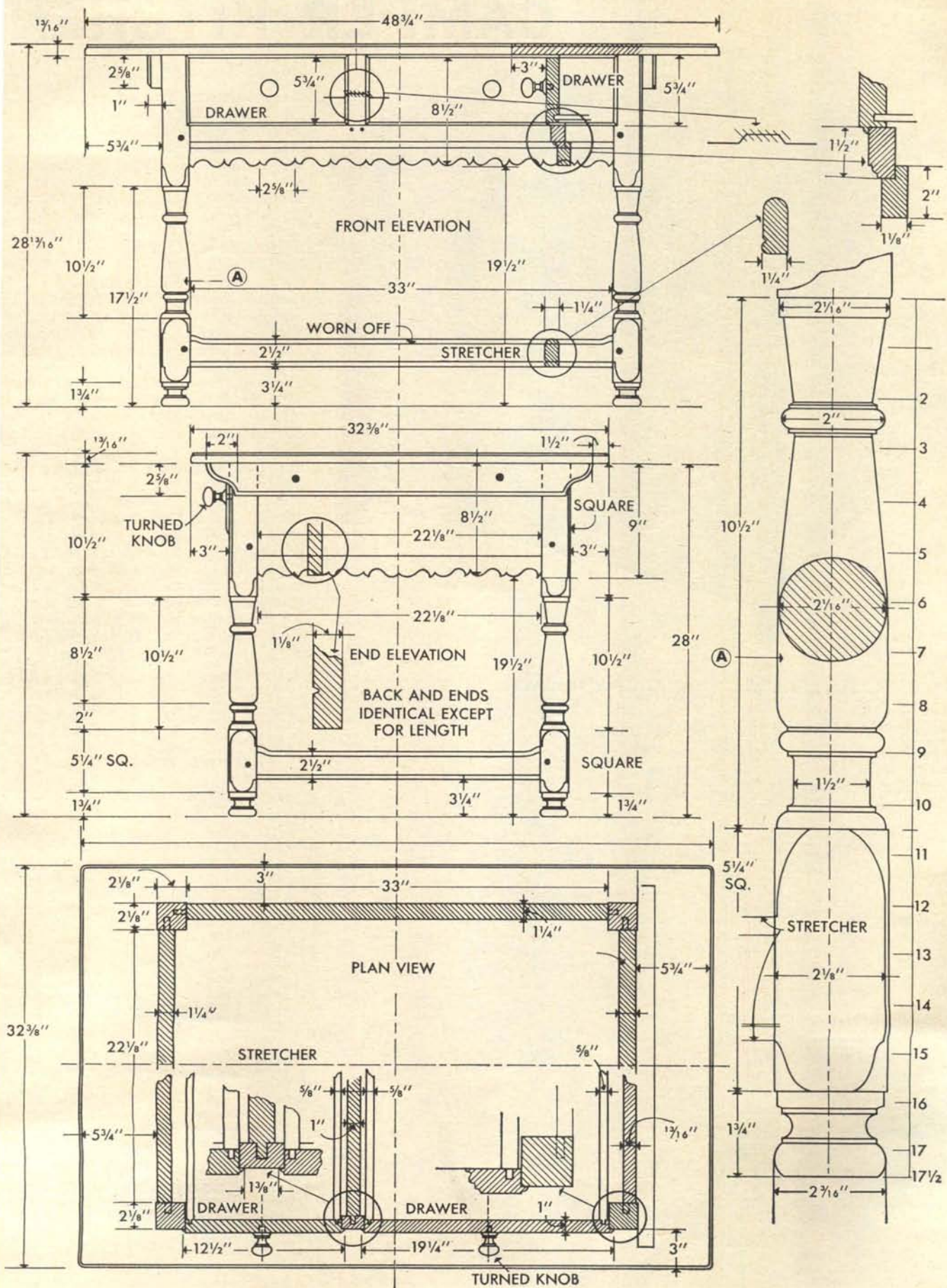
Note that while the four stretch-

ers between the lower ends of the legs are shown to be $2\frac{1}{2}$ in. high, the original height was $2\frac{5}{8}$ in. Over the years countless feet have abraded the wood and worn it down $\frac{1}{4}$ in. If you are reproducing the table, make the stretchers $2\frac{5}{8}$ in. their full lengths; if you are copying the table, make the ends $2\frac{5}{8}$ in. but rasp the rest down to $2\frac{1}{2}$ in. to simulate the centuries of wear from scuffing shoes.

There are tenons on the ends of the stretchers, as on the apron members, and they fit in mortises cut into the legs. The tenons are the full width of each member, and approximately half the thickness of the stock. We say approximately, because you will have to fit each mortise to its tenon, as did the original builder. After assembling the mortise-and-tenon joints, drill through and pin the various members to the legs with lengths of dowel. Glue also is used in each joint; keep the glue off the face of the stock, wipe away any that squeezes out as a joint is fitted.

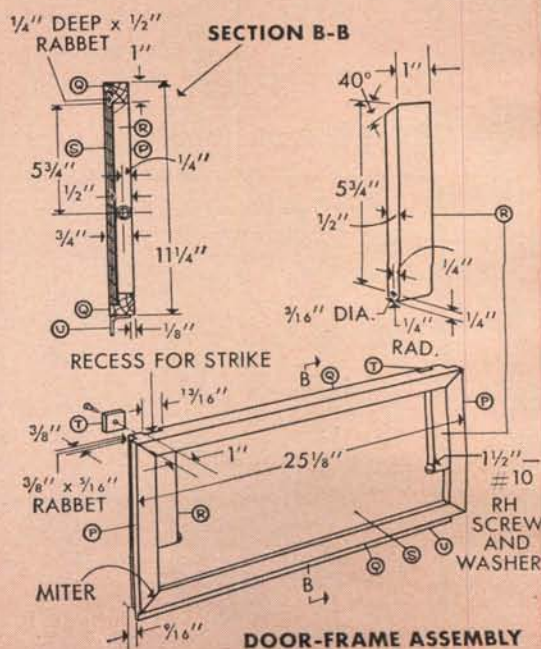
The aprons on the back and ends of the table are solid pieces, and can be cut from hardwood-faced plywood. The lower edge is decorated with a simple scroll-saw pattern.

(Continued on Page 55)



A detailed illustration of a wooden chest of drawers, showing the top, front, and side panels with drawers and a handle. The chest is made of dark wood and features a large drawer on the front and a smaller one on the side. The top panel is decorated with a geometric pattern. The chest is supported by four legs.

Start construction by making the stand, Fig. 3. Cut the parts as indicated in the Materials List. Bevel one edge of each of the H frame members 5 deg., then join the H and I members with miter joints. Use glue and screws on all joints. Fit the corner blocks J, attach with glue and screws. Bevel the ends





Make the cutlery drawer and the several condiment drawers, Fig. 1. Trim and fit as necessary to fit



in the cabinet. Make the two doors, as shown in Fig. 1, and fit and trim as necessary. Attach the doors with continuous hinges, aligning the doors so they are flush with the bottom shelf of the cabinet when they are open.

Make the stove cover, Fig. 4, and line the inside with heavy-duty aluminum foil. Attach with continuous hinge.

Make the stove-compartment assembly, Fig. 5. The wind guards X are lined with aluminum foil, in-

dicated as Y. Sand all surfaces, apply two coats of sealer, then apply an epoxy enamel in colors of your choice. Do not paint any of the aluminum foil; it must reflect the heat to protect the wooden members. Δ Δ

Materials List

(Dimensions are over-all sizes before cutting, fitting, etc.)

Fig. 1

1/4" Exterior-Grade Fir Plywood
A-Drawer Sides, 2-7/16" x 11-13/16", 2 req'd.
B-Drawer Ends, 2-7/16" x 11 3/8", 2 req'd.
C-Drawer Divider, 2-3/16" x 12", 1 req'd.
D-Drawer Bottom, 10-7/8" x 11-13/16", 1 req'd.
E-Drawer Sides, 3-15/16" x 12-5/8", 10 req'd.
F-Drawer Ends, 3-5/16" x 5 1/2", 4 req'd.
G-Drawer Ends, 3-5/16" x 3-5/8", 6 req'd.
H-Drawer Bottom, 5" x 10-5/8", 2 req'd.
I-Drawer Bottom, 3 1/8" x 10 5/8", 3 req'd.
S-Door Panel, 10 1/4" x 24 1/8", 2 req'd.
1/2" Grade A White Pine
J-Drawer Brace, 1-1/16" x 5", 4 req'd.
K-Drawer Brace, 1-1/16" x 3 1/8", 6 req'd.
L-Drawer Brace, 1 1/2" x 5", 4 req'd.
M-Drawer Brace, 1 1/2" x 3 1/8", 6 req'd.
R-Door Brace, 1" x 6-1/32", 4 req'd.
3/4" Grade A White Pine
P-Door Frames (short), 1" x 11 1/4", 4 req'd.
Q-Door Frames (long), 1" x 25 1/8", 4 req'd.
Miscellaneous
T-Magnetic Latch Plate, 4 req'd.
U-Continuous (piano) Hinge, brass-plated steel, 1-1/16" x 24", 2 req'd.

Fig. 2

3/4" Grade A White Pine
A-Back Panel Framing, 1" x 6-3/16", 2 req'd.
B-Back Panel Framing, 1" x 25 1/8", 2 req'd.
D-Center Framing, 1" x 24-5/8", 2 req'd.
E-Center Framing, 1" x 11 1/8", 2 req'd.
F-Center Framing, 1" x 10 1/8", 1 req'd.
M-Spacer, 1" x 4 1/4", 2 req'd.
N-Spacer, 1" x 2 1/2", 2 req'd.
O-Spacer, 1" x 4", 4 req'd.
S-Divider, 4" x 13 1/8", 1 req'd.
U-Bottom Panel Framing, 1" x 24 5/8", 2 req'd.
V-Bottom Panel Framing, 1" x 13 1/8", 2 req'd.
Y-Spreader, 1" x 11 1/8", 2 req'd.
Z-Spacer, 1" x 7", 2 req'd.
AA-Drawer Guide, 1/8" x 12 1/4", 1 req'd.
1/2" Grade A White Pine
W-Corner Blocks, 2" x 2", 4 req'd.
3/8" Grade A White Pine
BB-1/8" x 13 1/8", 5 req'd.
1/4" Exterior-Grade Fir Plywood
C-Back Panel, 5-3/16" x 24 1/8", 1 req'd.
L-End Panel, 13-7/8" x 18 3/8", 2 req'd.
P-Divider, 7 1/2" x 12-11/32", 1 req'd.
Q-Shelf, 11-7/8" x 12-5/16", 1 req'd.
R-Shelf, 12 3/8" x 24 5/8", 1 req'd.
T-Bottom Panel, 12 1/8" x 23 5/8", 1 req'd.
Miscellaneous
G-Handle Post, Hardwood, 3/4" x 1" x 1", 4 req'd.
H-Inside Handle Facing, Hardwood, 3/16" x 1" x 7 1/4", 2 req'd.
I-Outside Handle Facing, Hardwood, 3-1/16" x 1" x 8 3/4", 2 req'd.
J-Handle Core, Aluminum, 1/8" x 3/4" x 8 3/4", 2 req'd.

K-Bolt, Nut and Washer, 1/4" x 2 1/2", 4 req'd.
CC-Magnetic Latch, 4 req'd.

Fig. 3

3/4" Grade A White Pine
H-Stand Framing, 1" x 27 1/4", 2 req'd.
I-Stand Framing, 1" x 13-9/16", 2 req'd.
J-Corner Blocks, 5" x 5", 4 req'd.
K-Door Brace Stops, 5/8" x 6"
1/4" Exterior-Grade Plywood
L-Stand Panels, 5" x 27 3/4", 2 req'd.
M-Stand Panels, 5" x 14 3/4", 2 req'd.
Hardwood
G-Stand Legs, 1" x 1" x 19", 4 req'd.

Fig. 4

3/4" Grade A White Pine
A-Stove Cover Framing, 1" x 6-13/16", 2 req'd.
B-Stove Cover Framing, 1" x 25 1/8", 3 req'd.
C-Stove Cover Framing, 1" x 11-9/16", 2 req'd.
1/4" Exterior-Grade Plywood
D-Stove Cover Panel, 10-9/16" x 24 1/8", 1 req'd.
E-Stove Cover Panel, 6-3/16" x 24 1/8", 1 req'd.
Miscellaneous
F-Continuous (piano) Hinge, 1-1/16" x 24", brass-plated steel.

Fig. 5

1/4" Exterior-Grade Plywood
E-Bottom Panel, 11" x 24 5/8", 1 req'd.
H-Front and Back Panels, 3" x 23 1/2", 2 req'd.
I-End Panel, 5-1/16" x 11", 2 req'd.
X-Wind Guard Panel, 9" x 16 1/4", 2 req'd.
3/4" Grade A White Pine
F-Corner Post, 3/4" x 4-15/16", 4 req'd.
G-Grill Block, 3/4" x 9 1/2", 2 req'd.
J-End Glue Strip, 1/2" x 8", 2 req'd.
K-Side Glue Strip, 1/2" x 23 1/2", 2 req'd.
Do-It-Yourself Aluminum
B-Stove Anchor Angles, 1/16" x 1/2" x 1" x 1", 6 req'd.
C-Grill Bar, long, 1/8" x 3/4" x 23 1/2", 4 req'd.
D-Grill Bar, short, 1/8" x 3/4" x 10", 9 req'd.
Miscellaneous
A-Alcohol Stove, (available at Sears), 5 1/2" x 5 1/2" x 5-5/16", 2 req'd.
L-Washer, (Neoprene Faucet Washer), 1/8" x 1/8" ID x 9/16" OD, 6 req'd.
M-Sheet metal Screw, No. 4 x 3/4", 6 req'd.
N-Roundhead Machine Screw with nut and washer, steel, 8-32 x 3/4", 6 req'd.
O-Roundhead Machine Screw with nut and washer, steel, 8-32 x 1/2", 4 req'd.
P-Burner Control Block, mild steel bar, 3/8" x 1" x 3", 2 req'd.
Q-Burner Control Valve, beveled neoprene faucet washer, 1/2" OD, 2 req'd.
R-Valve Retainer Screw, steel, 10-24 x 3/4" roundhead, 2 req'd.
S-Threaded Steel Shaft, Make from 1/4" x 2 1/2" bolt, 2 req'd.
T-Knob Retainer Pin, steel, 1/8" Dia. x 1/2"
U-Control Knob, hardwood, make from 3/4" dowel, 2 req'd.
Y-Wind Guard Facing, Heavy-Duty aluminum foil, 9" x 16 1/4"

J. W. CLEMENT

TOY PILE DRIVER

Piles can actually be driven into soft soil with this rugged action toy that the young construction engineer in your family will be delighted to own. The cab of the toy is strong enough so that it can be used as a seat, and the wide-spaced wheels assure that the toy is not easily tipped over even by

very active junior operating engineers.

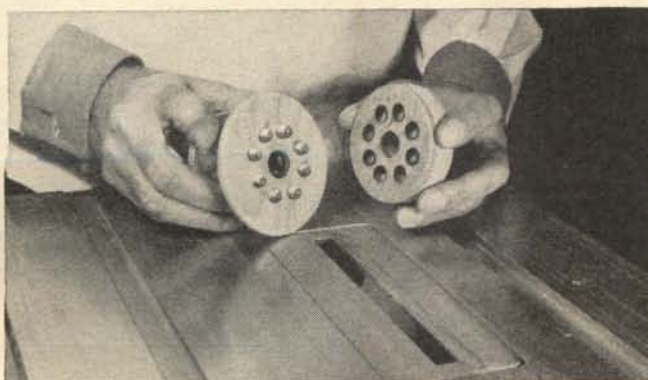
Start construction by cutting the two long frame members, the spacer blocks and the driver masts from 1-in. softwood. Attach the 5/16 x 7/8-in. guide strips on the masts with glue and flathead screws. Glue and screws are used

to attach the masts to the frame. Use four 1 1/4-in.-No. 10 flathead wood screws in each mast. Attach the two frame rails with the 4-in. spacer blocks, using glue and wood screws. On the original a 1/4 x 6-in. machine screw was used through each spacer block and the frame sides for added strength. The tops of the masts are positioned by a 1/4 x 3/4 x 4-in. strip glued and screwed to each, as shown in the drawing.

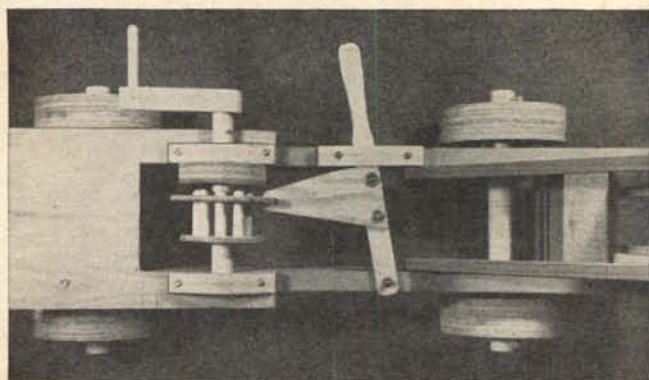
The front and back of the cab are cut from 1-in. stock, the sides can be 1-in. material or 1/2-in. wood. The roof is shaped from 1/4-in. plywood. Make saw kerfs in the underside of the roof, spacing them 3/8 in. apart. Cut the kerfs deep enough so only one ply of wood is left. Use glue and 3/4-in.-No. 5 flathead wood screws to attach the roof to the cab. Space the screws about 1 in. apart.

The cab floor is cut from 1/2-in. plywood or solid stock to the dimensions given. The 4 x 5-in. cut-out is for the hoisting mechanism. A 3/4 x 1-in. strip is glued and nailed to the underside of the rear of the cab floor to permit installing the hinges that hold the cab in place. The cab pivots back to permit access to the hoisting drum and clutch. Use glue and two flat-head screws driven through the floor into the rear of the frame to hold the floor. The four screws that hold the pillow blocks are driven through the floor into the frame, holding the front part of the floor.

Cut out the clutch and drum disks, clamp them together and drill them all at the same time to assure alignment of the holes. Enlarge the center holes in the drum disks so they rotate on the crankshaft. Assemble the drum and clutch on the shaft and install the pillow-block bearings. Install the clutch-lever assembly. Axles for



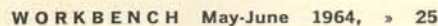
Clutch is "heart" of the pile driver. Dowel ends run through side of drum, are aligned with holes in clutch disk.



Top view of chassis shows location of clutch and clutch-control lever. Moving lever forward engages clutch.

Make the hammer and fit it be-

and around the drum. Now engage the clutch, pull the hammer to the top of the masts, then release the clutch. The hammer will drop with a realistic slam on a toy pile. $\Delta \Delta$



Built-In Bookshelf-Study

GORDON P. MANNING

Blank wall in 10 x 15-ft. room becomes library, study and music center; window is not changed.

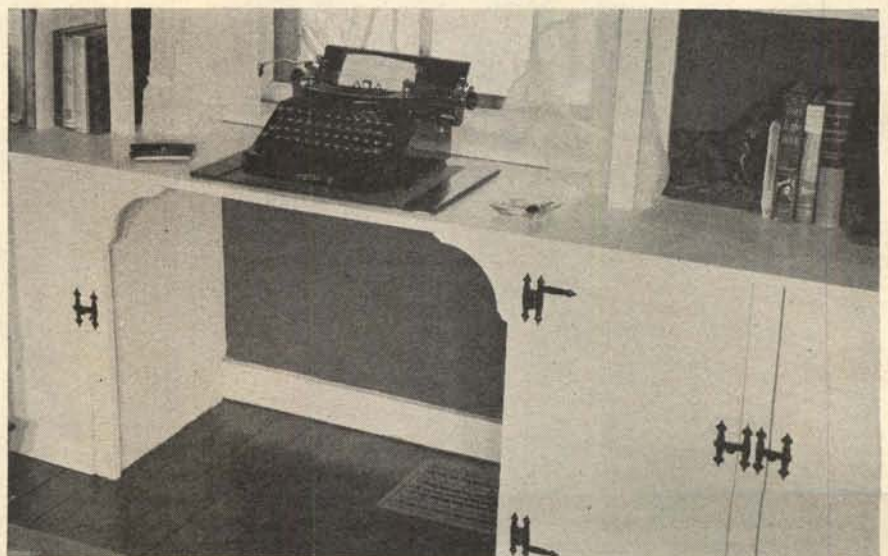


Built-in kneehole desk is located over register, eliminating need to reposition it. Window lights desk.

As shown in the "before" photo, one end of our small living room—measuring approximately 10 x 15 ft.—was used as a study. A desk was located to the left of the single window where hand writing could be done, but there was no table low enough for a typewriter. We had accumulated a large number of books that also needed a storage place, and we wanted a radio and phonograph in the room. The "after" photograph shows our solution.

It is not likely that your own room would be the same dimensions, nor that you would want all the items in your built-in that we have in ours. Many of the ideas, and the over-all plan, however, can be modified to be used in rooms of almost any size.

First step was to carefully measure the wall. We then determined



the position of the cold-air register in the floor. This could not be covered, so the kneehole desk was located over it. An added advantage was that the single window in the wall was just above the register. We were able to locate the desk for the typewriter directly in front of the window, the register was

then at one side of the opening on the floor. In rooms of different design the register might not be near enough to the window to permit locating the desk in front of the window. In this case it would be necessary to have the desk on the blank wall, or to move the register. In the latter case the time and

work required might not be worth the final result. A third method would be to build a false cabinet over the register and use a grill-

work door to permit air to pass to the register. Our 300 books are on shelves 8 in. wide. The typewriter desk and

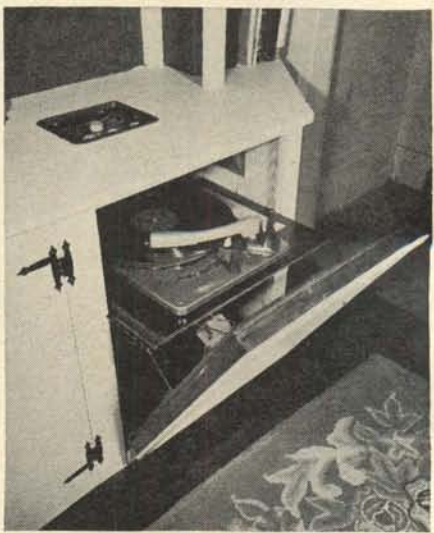
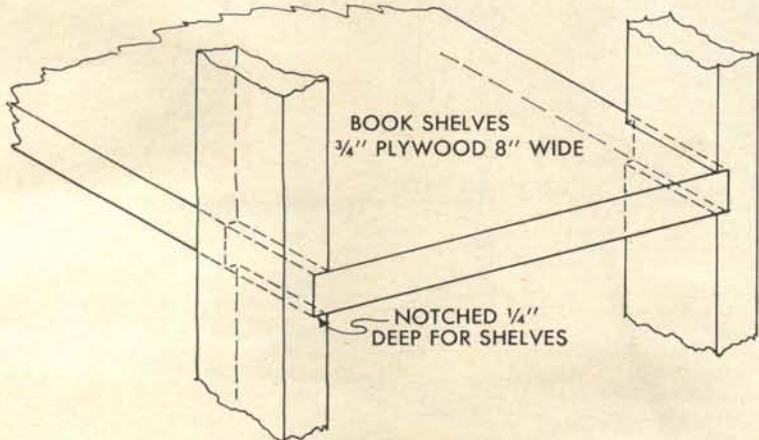
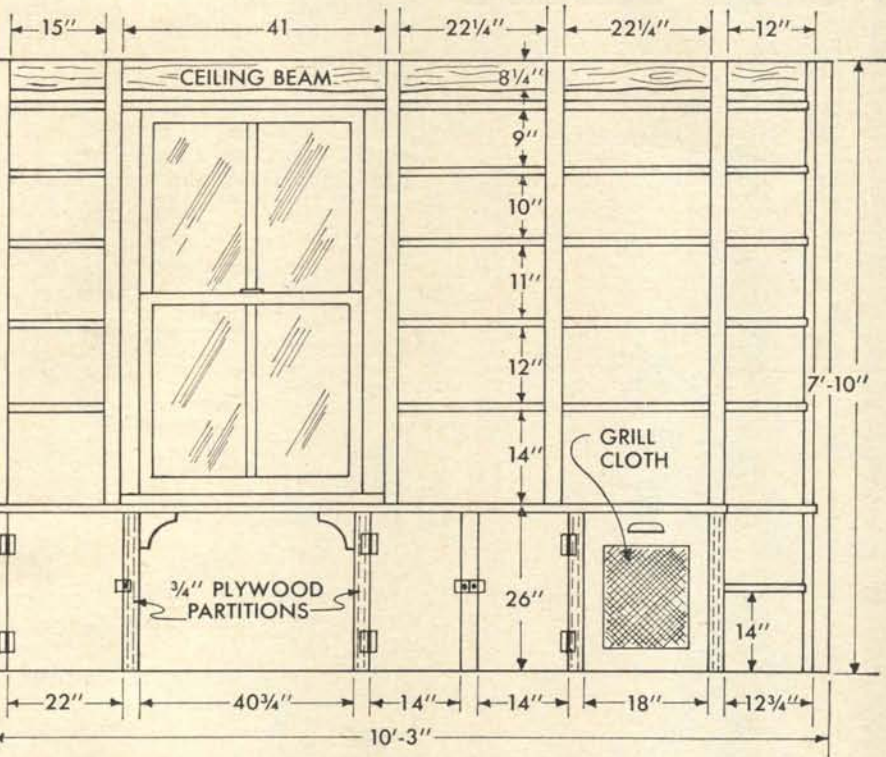
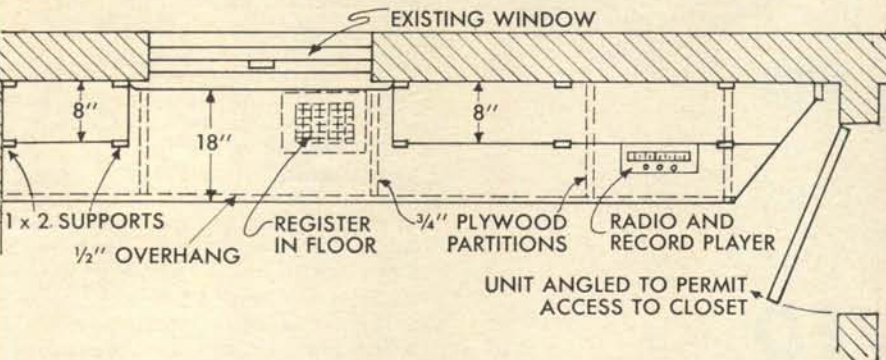
cabinet tops are 18 in.; the projecting 10 in. in front of the bookshelves can be used for very large volumes or for knickknacks as we have done.

Shelves and cabinets all are made of 3/4-in. interior-grade plywood, enameled. Supports for the bookshelves are lengths of 1 x 2, notches being cut to accept the shelf edges, as in the drawing. The door for the radio and phonograph contains the speaker, and consists of a frame of 1 x 2s covered with grill cloth. Our particular unit permitted us to inset the controls in the top of the cabinet, as in the photo. Your own radio or hi-fi set might require a different arrangement.

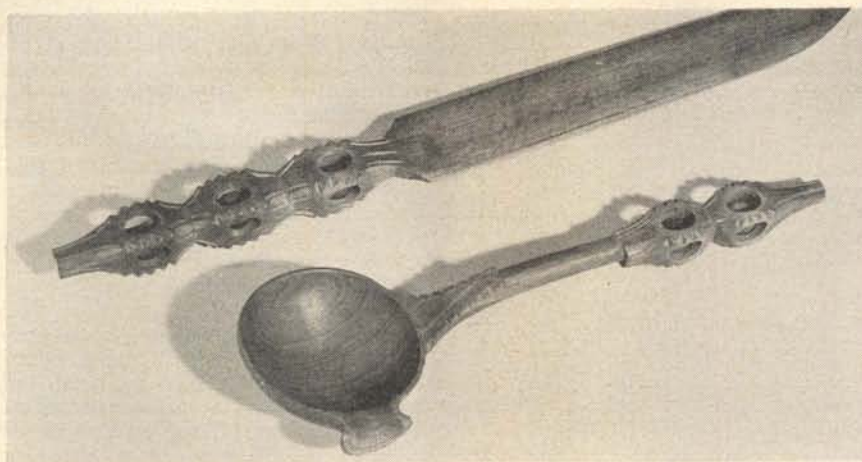
In the photo of the opened record player you can note that the cabinet top is cut at an angle. This was required in our particular setup to permit access to a closet. It also can be seen that we left the top shelf of the bookcase open so the beam in the ceiling would show. Some builders might want to close this in, possibly install a fluorescent lamp to provide indirect lighting in the room. Such a light would be especially effective over the window.

Depending on individual choice, and the type of wall covering in the room, the bookshelf-study could be made of hardwood-faced plywood, in a grain and color that would match or contrast with existing wall paneling.

Should there be receptacles low on the wall, it would be wise to relocate them on the wall between the cabinet tops and the lowest bookshelf.△△



Record-player and radio are built into cabinets, saving space that would be required for separate pieces.



HAND-CARVED Knife and Ladle

HI SIBLEY

Photo courtesy Robert Lindquist

Both of these interesting pieces from Sweden have similar handles, each carved identically on all four sides. The items are a real chal-

lenge to the beginning carver, and a fine exercise for the advanced user of knife and chisel.

Start the knife by roughing a

blank to shape, then drilling $\frac{3}{8}$ -in. holes in the handle. A round file is used to enlarge the holes to oval shape. Notch the handle between the holes, then with knife and veining tool, carve the decorations. Making the blade is a draw-shave job, carefully done until nearly to finished thickness. Use sandpaper to finish the final shaping. Use caution in the last stages, because it is very easy to go too far and have to remake the project completely.

The ladle is made much the same as the knife, first being rough cut with a band saw or scroll saw. After sawing to size, work the bowl to shape, then carve the handle as you did the handle for the knife.

Small wooden balls are turned on a lathe, their diameter being just a fraction larger than the size of the holes in the handles. Sand a very slight flat on each ball, which just permits it to be forced into one of the holes in the handles. The wooden spheres will not fall out, and will give the impression they were carved right in the handles.

Finish the job by carefully sanding all over the handle and bowl, then apply filler and wax. $\Delta \Delta$

FIG. 1

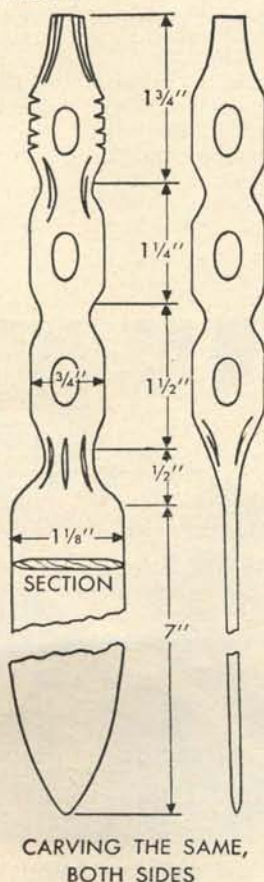


FIG. 2

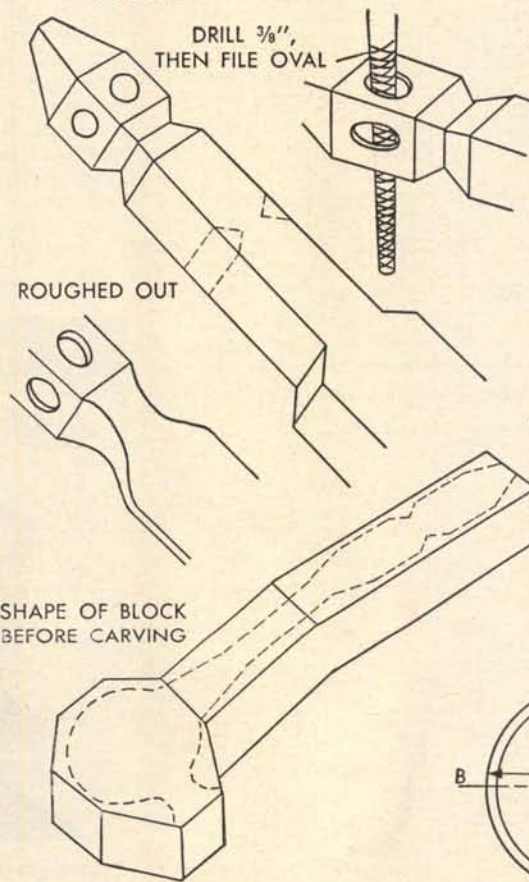
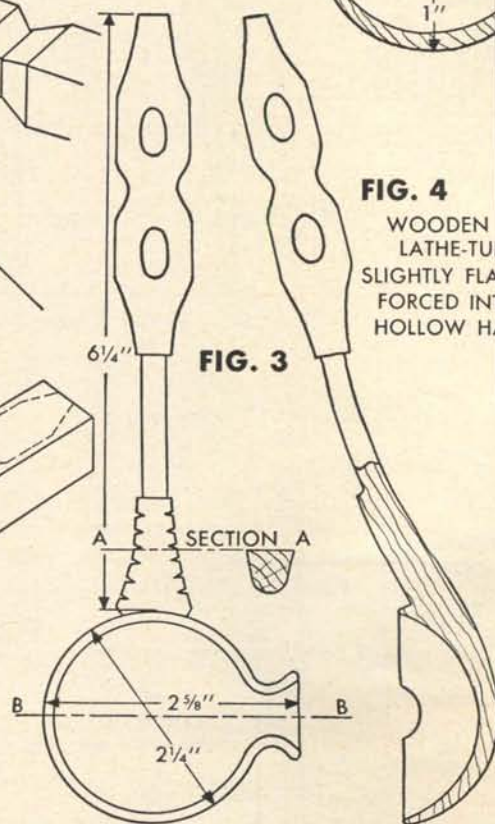


FIG. 4
WOODEN BALLS,
LATHE-TURNED,
SLIGHTLY FLATTENED,
FORCED INTO THE
HOLLOW HANDLES

FIG. 3



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Beautify Your Basement...

PART IV

While the bar shown in the recreation room of our remodeled basement is not finished, Fig. 5, it already has had plenty of use. The first weekend it reached the stage of construction shown, the teenage boy in the family had a gang in for dancing. Unfortunately the

builder did not have any sort of sealer on the wood, and the spilled soft drinks, plus grease from potato chips, dip and other goodies created quite a problem in getting the wood back to a condition that would accept any sort of finish. As an added handicap, the drum trap under the

bathtub above the bar sprang a leak one night. The lid was replaced easily, but the ceiling tile was damaged, and it took a week for the bar top to dry. If there are no more unforeseen problems encountered we hope to show a photo of the completed bar in an early issue.

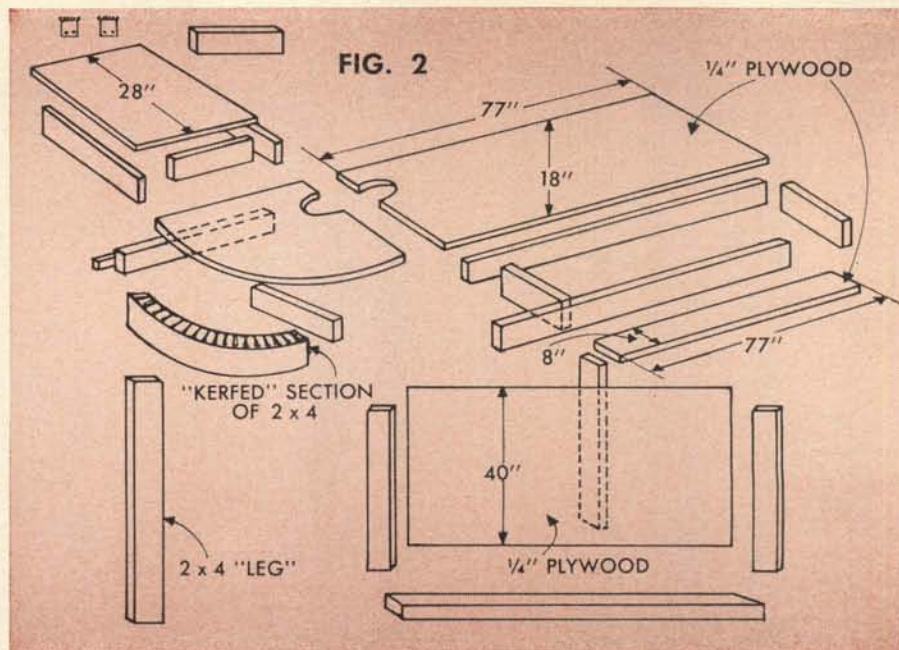
The somewhat unusual construction of the bar was dictated by the lumber that was on hand, plus the location of a soil pipe from the bathroom above. The main portion of the top is a rectangular frame of 2 x 4s on which a sheet of 1/4-in. plywood is glued and nailed. At the end next to the soil pipe, the 2 x 4 crosspiece is about 3 in. from the edge. This permitted making a half-round cutout to fit against the pipe. The curved section of the bar top, Fig. 1, actually is a triangle with one of the sides curved. Its one straight edge also has a half-round cut in it to fit around the soil pipe. The curved edge is a 2 x 4 with a number of saw kerfs made in it about 1/2 in. apart, and to a depth that left only about 1/16 of wood



1. Curved edge for corner of bar was made by kerfing a 2 x 4, bending and gluing, nailing to 1/4-in. plywood.

left on the surface that shows. This permitted easy bending of the member, and the closed kerfs then were filled with glue and the plywood top was fastened with glue and a few brads. Only a few brads were used because the kerfed wood will break up readily if nails or brads are driven into it.

Scraps of wood and a small piece of $\frac{1}{4}$ -in. plywood were used to make the hinged section of the bar, Fig. 3, that permits a person to walk behind the bar without the need for stooping down and crawling underneath. The general dimensions of the bar are given in Fig. 2. All dimensions will have to be changed to suit a particular location, even the height being varied according to personal preference. Bar stools come in various heights, so do not make or purchase them until the



3. Hinged portion of bar is simple frame of scrap lumber on which $\frac{1}{4}$ -in. plywood is glued and nailed for "box."

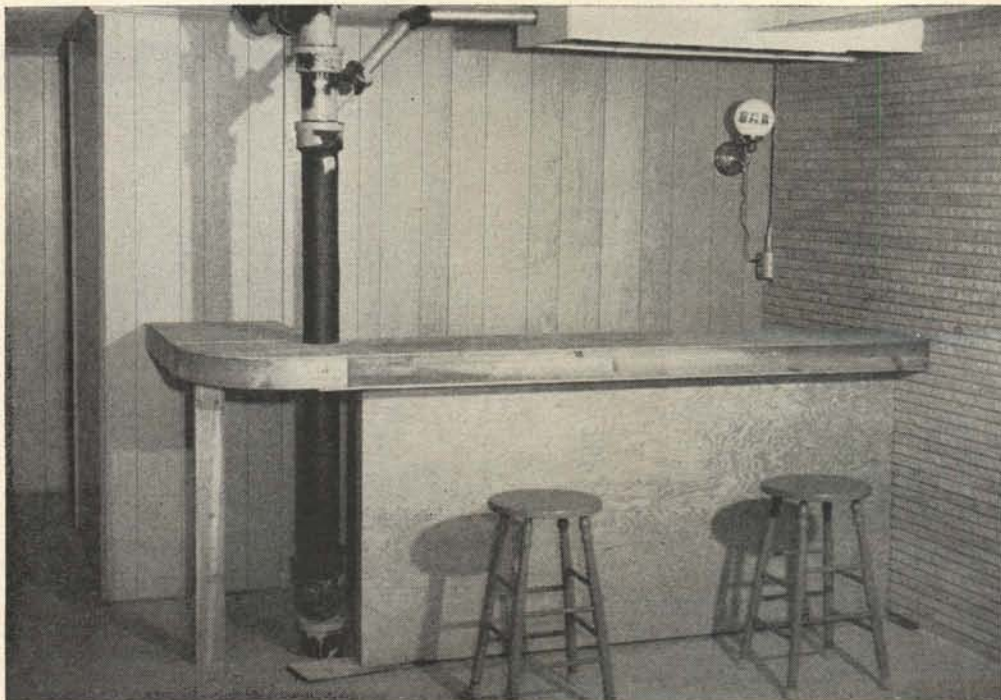


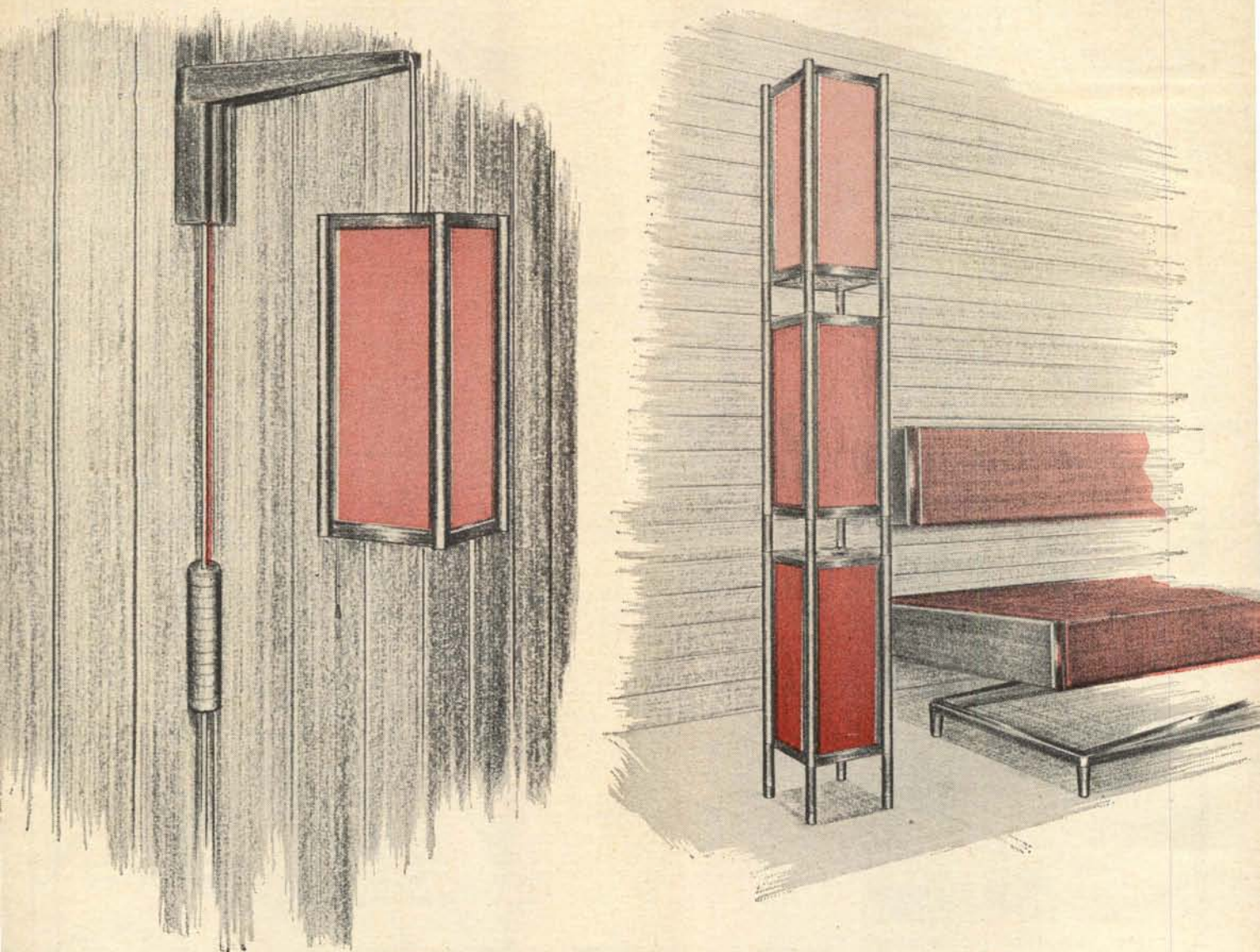
4. Photo of bar back shows how plywood is glued and nailed to rough frame of 2 x 4s and 2 x 2 center brace.

bar height has been determined. As shown in Fig. 4, the upright of the bar is a frame of 2 x 4s on which a sheet of $\frac{1}{4}$ -in. plywood has been glued and nailed. A length of 2 x 2 was used at the center to stiffen the plywood. The upright was located 8 in. back from the front edge of the bar, then an 8-in. strip of $\frac{1}{4}$ -in. plywood was fitted on the underside of the top between the front edge and the upright. It is planned to build shelves on the back side of the upright member, and also on the wall between the bar and the back wall, Fig. 4. The resulting L-shape structure will be

more self-supporting. The bar fits around, but is not supported by the soil pipe, as this could cause leaks. A 2 x 4 "leg" supports the bar at the end around the soil pipe. A cabinet will be built under the curved section of the bar, and the soil pipe will be disguised as a tree with artificial materials. $\Delta \Delta$

5. Height of bar determines height of stools. From floor to top of this bar is 40 in., personal choice might make bar much lower or even higher.





Contemporary Lamps

DON W. CARTNER

Even if you have not built the other items of living-room furniture in the WORKBENCH Contemporary Collection, you may want to make these attractive contemporary lamps. If you have built the other pieces, you definitely will want to complete your room by illuminating it with the lamps.

One basic unit, Fig. 1, is used for all three styles of lamps. The basic unit is suspended from an arm, Fig. 3, for the wall lamp. For the table lamp, the basic unit is fitted with legs in the bottoms of the tubes of the frame, and the tops of the tubes are fitted with caps. The floor lamp consists of three basic units, spaced by connectors. Legs and caps also are used in the tubes.

Start construction for each basic unit by making the top and bottom square frames, Fig. 2. The top ring can be turned on the faceplate of a lathe if you have that tool. If not, make a pivot jig for your bandsaw or jig saw and cut out a disk slightly oversize. Drill a hole through the center of the disk and fit it on a bolt that can be chucked in a drill press. True it up with rasp and sandpaper. Remove from the improvised arbor and drill out the inside with a hole cutter, hole saw or any tool available. Sand smooth, then fit it in the top frame. The bottom disk for the basic unit can be made in a similar manner, eliminating the cutting out of the center. Note that a strip of 1/16-in. walnut, (or other hardwood), is

glued around the top ring and the bottom disk. This can be veneer tape, available at hardware and building-supply dealers. Rings and disks are held in the upper and lower frames by 1/8-in. dowels, fitted and glued as indicated in Fig. 2.

The cylinder-shape light diffuser, Fig. 2, is made by cutting a piece of buckram, (or one of the new synthetics, such as "Pellon"), to size, dampening it, then wrapping it around a jig made by fitting two tall juice cans together. When the material has dried, cement the lapped seam.

For the corner posts, first rip lengths of hardwood to 1/2 x 1/2 in., then cut the rabbet and slots as indicated in the cross section at the

ASSEMBLY

FEI

1/4" DIA. HOLE

1/8" DIA. HC

SECTION

I.D. x 1/2" O.D.

SECT

WORKBENCH May-June 1964. p. 33



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right of the light-diffuser cylinder in Fig. 2. Cut these to lengths of $13\frac{1}{2}$ in., then drill each end for $\frac{1}{8}$ -in. dowels as indicated, and drill the inside corners for the three $\frac{1}{8}$ -in. dowels required. Next step is to cut 15-in. lengths of rigid copper tubing; the tubing must have an inside diameter of $\frac{3}{8}$ in., and outside diameter of $\frac{1}{2}$ in. Inside each length of copper tubing is fitted an 11-in. length of $\frac{3}{8}$ -in. dowel. Use an epoxy glue on the dowels. Make sure there is a 2-in. clearance at the top and bottom of the tubing. Holes now are drilled through the tubing and into the dowels, to accept short lengths of $\frac{1}{8}$ -in. dowel. At this point, clean and polish the copper tubing using fine sandpaper and steel wool. When well polished, spray each tube with clear plastic or laquer. When the spray is dry, glue in the $\frac{1}{8}$ -in. dowels. Wipe the projections of the dowels with glue, then fit the tubing to the rabbet in the corner post. If your spacing of the holes is correct, the dowels should slip into the holes in the corner post, and the tubing should fit snugly in the rabbet. Make up four of these corner-post assemblies for each unit.

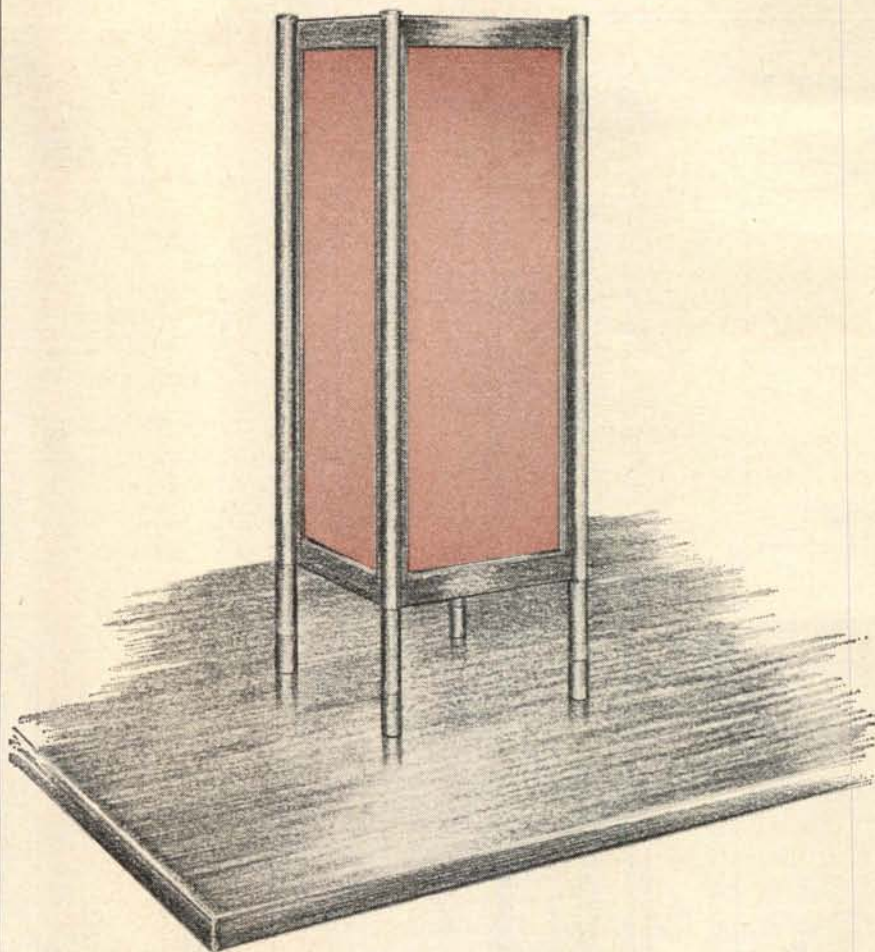
Now, glue the cylinder-shape light diffuser to the bottom frame and glue the four corner posts in

place. Temporarily put on the top frame, (do not glue), and apply the desired finish. Remove the top frame when the finish is dry and insert the fiberglass panels that are edge-glued in the corner posts. Finally, glue on the top frame, then insert the bulb.

Legs, connectors and top caps are detailed in Fig. 2. They are used as described, to make the various styles of lamp.

In Fig. 3 are detailed the arm and weight for the wall lamp. Drill and cut out all the weight rings to the dimensioned inside and outside diameters. Temporarily tack top and bottom caps to the ends of the stacked rings with 3d finishing nails on 90-deg. centers, drilling holes to prevent splintering. Center punch the caps for the lathe. Fit in lathe, turn or file true, and make chamfers on the edges of each ring to produce grooves. Remove from lathe, take off caps and drill and counterbore them as indicated. Glue on bottom cap. Glue copper tube into bottom cap with epoxy cement, then fit on top cap to align the tube. When glue has set, remove top cap and fill space around tube with enough No. 6 lead shot to equal approximate weight of lamp. Glue on top cap.

Screw eyes are fitted in one corner post only of the pull-down wall





Titled "Early American", this picture was a first-prize winner in a contest in 1961. It is a true masterpiece.

write for their catalogs.)

Pictorial marquetry, an art that is centuries old, is enjoying a revival in Europe, and the United States. The British Marquetry Society, with a world-wide membership, pioneered this revival and holds annual exhibits of exceptionally fine examples of the art. With more than 100 of the most colorful, rare and exotic woods from all over the world available to him, the modern "marquetrarian" can fashion beautiful pictures, or use the technique to produce decorative motifs for furniture.

There are several things to keep in mind when adapting a picture for marquetry: First, make as few lines as possible; every line has to be cut. Keep a drawing simple, let the wood tell its own story. There are no bright blues or greens in wood; change the "high-noon" scene to evening, and use reds, browns and pinks instead. Wood can best express itself as wood—half-timbered houses, boats, interiors and trees are natural choices for subjects.

Gather a large stock of "freak" and unusual-grained woods first, then try to find a subject to suit them. Never look for a wood to suit a picture. If your picture is a low-horizon subject that requires a large expanse of freak sky that you cannot find in your veneers, change to a high-horizon picture where you can use plenty of wood tones to make interesting foregrounds featuring rocks, paths, streams, etc. Landscapes, seascapes, portraits, still-lives, figure studies and especially animal studies make excellent marquetry subjects.

Study the various kinds of woods to learn the differences in grain, figure, texture, color, markings and other characteristics. No two trees, even of the same species, are ever identical, and markings vary in different parts of the same leaf of veneer.

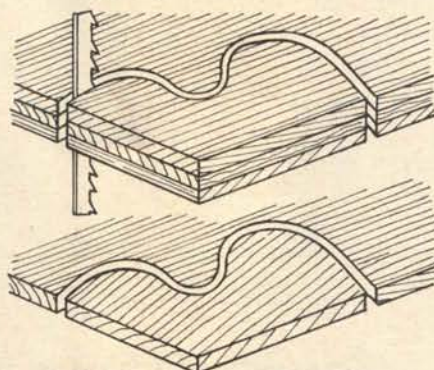
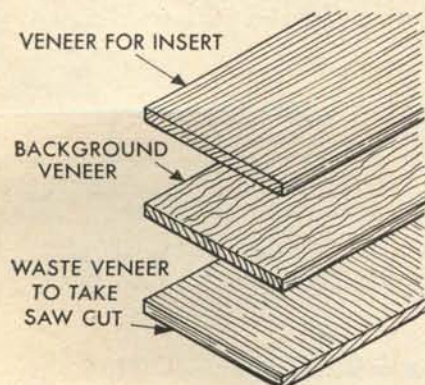
There are four power-saw techniques in marquetry, and one of

PICTORIAL MARQUETRY

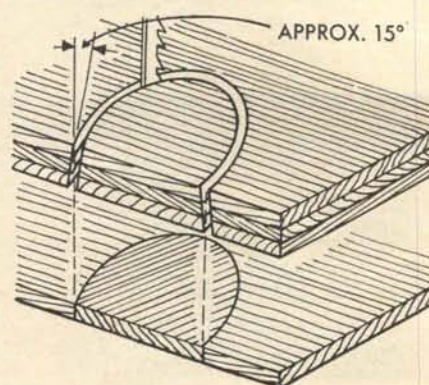
W. A. LINCOLN

(Our author, Mr. Lincoln, is the director of Silhouettes and Shapes, Limited, London, England, an organization that specializes in fine hardwood veneers for marquetry, cabinets and paneling. Mr. Lincoln also writes articles for an English magazine "Woodworker". This article is a condensation of material that was published in 17 parts in that magazine. We have deleted much of the information that pertained to the very thin, .7 mm, veneers that are used extensively in Europe. The thin material is readily cut with a knife, but can be sanded through if

a craftsman is too vigorous with abrasives. The standard veneer thickness in the United States is 1/28 in., although some stocks are available in 1/20 in., mostly because we use power jig saws. Another obvious advantage of the thicker veneer is that it will accept much more sanding without the risk of being sanded completely through. Craftsmen can order thin veneers from overseas, remembering the added cost of shipping. Many of our advertisers who deal in supplies for woodworkers sell veneers, and we suggest you check their ads and



DOUBLE-CUT AND BEVEL-CUT

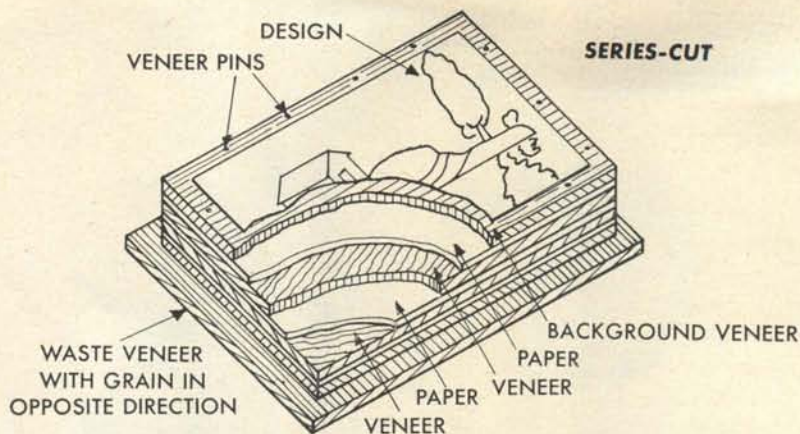


these can be done in two ways, so there are actually five.

For the "Double-Cut" method, stack a leaf of dark veneer on a leaf of light; fit both on a "waste" veneer. The latter is to accept the saw cut and prevent the good veneers from tearing or splitting. Staple the sheets together in a 1/2-in. working margin allowed. Drill or pierce a hole in the margin, next to or on the line of cut. This hole need be only about .008 in., as saw blades for marquetry can be obtained with a thickness that size. We are assuming this to be a simple design for practice; so cut out the design, then remove the staples. Interchange the dark and light parts and you will have two identical designs, the parts of each being opposite in color from the other. Glue the parts on kraft paper, lightly sand the backs and fill the open saw cuts with matching wood filler. The disadvantage of the double-cut is the visible saw cuts; the advantage to the beginner is ease of assembly and assurance of a good fit. The "Bevel-Cut" method, a variation of the Double-Cut, corrects this. Instead of having the jig-saw table horizontal, angle it to about 15 deg. Make the same project with light and dark veneers and you now will find that the saw cuts are almost invisible. This is because the upper edge of the inner piece is wider than the opening cut in the outer section of the veneer. This "overlapping" hides the saw cut. Be accurate, because errors in sawing will show as large gaps.

The "Series-Cut" is used when a number of items are to be made. Suppose you want to make 12 decorative motifs of a rose; first prepare an original line drawing and note the number of woods, grain directions, etc. You will need about 24 copies of the design in reverse. (Designs for marquetry are always made in the reverse; the assembled picture is glued to paper, then the paper-and-veneer assembly is cemented to a "groundwork", which is a piece of dimensionally-stable stock such as plywood or particle board. When the cement has dried, the paper is sponged and removed from the veneer.) One copy of the design is required for each sheet of veneer needed, and 12 copies are needed on which to assemble the 12 completed pictures.

The reverse patterns are cut up and fixed to veneer pads, made up 1/2 in. oversize as before, with a waste veneer beneath, and all stapled together in the margin. Carefully cut right on the line with the finest blade you can handle. Also, with 12 or more sheets, fit waxed paper between the sheets to lubricate the blade. After cutting all the pieces, arrange them in piles, or



trays, then fit them to reverse-design patterns that have been placed on a flat surface and brushed with glue. Stack all the completed pictures, with sheet plastic between each one, and apply pressure until the glue is dry. Then lightly sand the backs of the pictures and they are ready for cementing to groundwork.

The Marquetry School of Toronto, Canada uses a modification of this method, stapling single veneers and a reverse design to a piece of 1/16 in. gaboon plywood. The cut is made right on the line and complete pictures are cut and assembled to a reverse design.

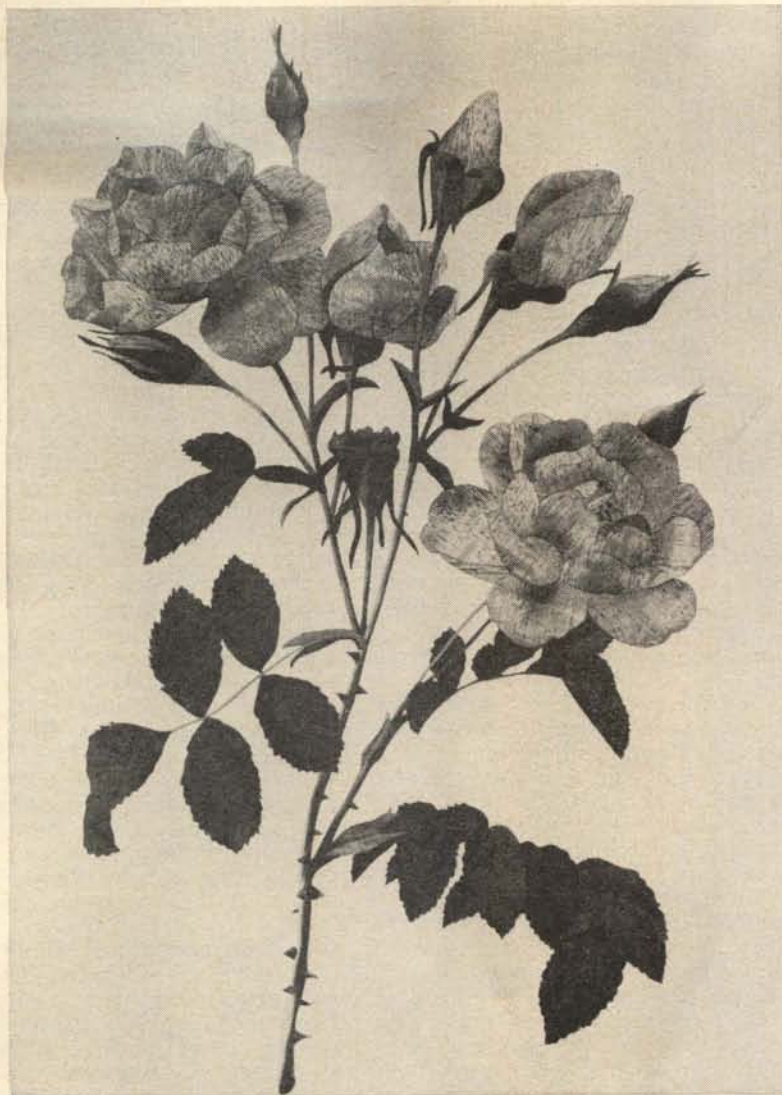
When the "Sandwich" or "Pad" method is employed, the reverse drawing is made on transparent film with a 3/4-in. working margin all the way around. The film is placed on the selected veneer and the extremes of the part wanted in the design are marked on the veneer in pencil. The part is marked at least 1/2 in. oversize. Cut out this section with a knife or veneer saw and a straightedge. When sections

of veneer for each part of the picture have been cut into approximate rectangular shapes, they are assembled in any sequence together in layers to form a "sandwich". Adjacent parts of a picture cannot be together because each is 1/2 in. oversize, so are sandwiched above and below. Use as many layers as necessary and staple them in place through the working margin; the reverse design is placed on top and a waste veneer is located beneath the sandwich. Drill holes in the margin near a convenient design line. Also drill any island parts rather than saw across to them. Omit minor details that can be "let-in" afterwards. If the pad is too large, cut it in half across a design line and tape the cut edge with cellulose tape. The technique allows for considerable error in sawing; any deviation from the design is made simultaneously in all pieces and a perfect fit is assured.

Start sawing the small "island" parts first to avoid having the sandwich fall apart. When coming to a tight turn, back out and come again

In a national exhibition by the British Marquetry Society this picture called "Wolf Hounds" took first place, (B) Class, Intermediate.





from the opposite direction. Keep the saw table horizontal. Use the finest saw blade (.008 in.) obtainable. The picture is assembled on a reverse-design copy as before.

Much used by the British Marquetry Society to produce some truly beautiful examples of pictorial marquetry, the "Window" method permits the "marquetrarian" to determine ahead of time the best way in which to arrange the flow of grain, color streaks and other characteristics of a veneer to create the most interesting picture. First, obtain a leaf of white, soft, easy-to-cut sycamore, holly or poplar; even cardboard will do. Have the usual reverse design with guide center lines on both the design and waste veneer, (or cardboard). Trace only the outline of the first part to be cut directly on the "waster." With a sharp knife cut out this section to form a window, making the window about $\frac{1}{4}$ in. undersize so the design line remains visible on the waster. The selected veneer then is placed under the window and the exact flow of grain can be seen. When the correct position is determined,

mark the veneer with a pencil. The required veneer, the "window" veneer and a piece of scrap underneath are temporarily glued together and cut out. The parts then are separated and the veneer shape is carefully inserted back into the window. The next part is traced on the waste veneer, the undersize window is cut out and the previous sequence is repeated. The operation is repeated for each piece and the picture gradually grows like a jig-saw puzzle.

Small, intricate details can be inset into a completed picture by either the sandwich or window method. The required veneer simply is fitted on the picture, like a patch on an inner tube, and the design traced on the veneer. The part can be "let-in" by using the Bevel-Cut to eliminate visible joints.

Shading of veneers is done by heating fine, sharp sand in a flat tray; use a hot plate or other heat source that can be controlled to maintain a steady temperature. Heap the sand into mounds and insert the veneer edgewise. The veneer will shade with fine gradua-

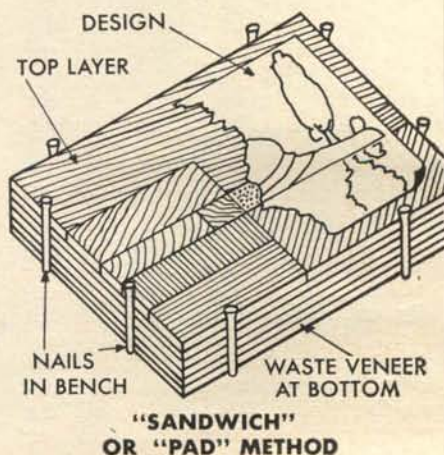
Careful choice of wood grains, meticulous fitting, give these rose petals a genuine three-dimensional quality.

tions of tone. Only a few seconds are required and the tone will deepen from the center toward the edges. Veneers can be masked with a piece of scrap, or sand can be poured on the veneer when shading is required away from the edge. Shade veneer before cutting it to size, as it may shrink or curl.

Examine the assembled picture under a strong light, (after it is glued to kraft paper). Correct any poorly fitted parts, damaged or missing parts. Fill all gaps with matching filler. Fasten the picture to a flat and level surface with tape around the margin, and level the back so it is ready for mounting to groundwork.

The border around your picture should be in keeping with the theme of the subject and not divert attention from it. There are a number of types of borders; you will find them pictured in woodworkers' catalogs. The favorite is the one that appears to be cut from one single piece. This is done by running the grain of the long sides of the border parallel with the long sides. The end strips of border are cut so the grain runs at right angles to the width of the picture, but in the same direction as the border on the long sides.

Plywood used for groundwork should be at least 5-ply, and $\frac{3}{8}$ to $\frac{1}{2}$ in. thick. Keep it in your shop for a week or so to adjust to the temperature and humidity conditions in your home. If you make your own plywood groundwork from a central core of $\frac{1}{8}$ -in. yellow poplar, with 1/20-in. cross bandings at right angles, and with 1/28-in. outer veneers, it is a good idea to use poplar throughout. Remember the grain direction of the face of the groundwork must be opposite to the predominating grain in the picture. Most pictures have both horizontal and vertical grains, so the trick is



to lay a "sub-veneer", (making 7-ply), at 45 deg. Use a sheet on both sides of the groundwork veneer to "balance" the construction. For very tip-top work, some "marque-trarians" cement a fine silk or muslin over this to form a perfect base, in the event some of the picture grain is at 45 deg.

Keep your work dry when sanding. The sanding dust can plug open-pored woods, then turn to dye and discolor lighter woods if it is contacted by moisture. If parts of a picture have been taped together, use moisture sparingly to remove the tape. Use a scraper to clean any adhesive, then sand lightly. Brush dry and free from sanding dust with a soft brush or use a vacuum cleaner. Brush on a coat of sealer to fill open pores, and raise the grain. Sand lightly, when dry, then apply two coats of sanding sealer. Allow the picture to stand for two or three weeks. You will note patchy areas; the various woods react differently to finishes, lightly sand, then apply a couple of final coats of clear lac-

quer or clear sealer. When completely dry, rub down lightly with 4/0 steel wool. You do not want a glossy finish, as the light reflections will make it difficult to see the various parts of the picture.

The following list, arranged alphabetically, gives sources of veneers and supplies:

Albert Constantine and Son,
2050 Eastchester Rd., Bronx,
New York, 10461. Catalog 25 cents.
Barap Specialties, P. O. Box 2044,
Chicago 9, Ill.

Catalog 15 cents.

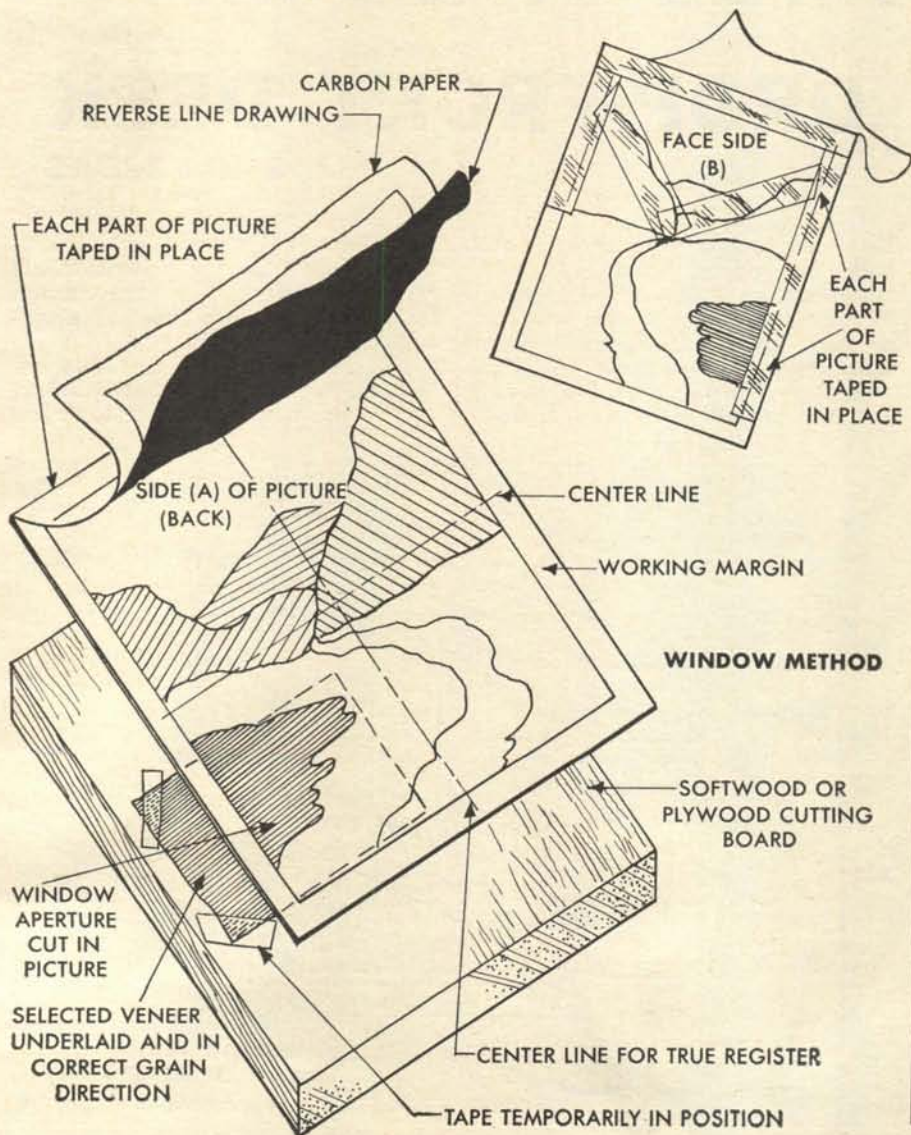
Craftsman Wood Service Co.

2727 Mary St., Chicago 8,
Ill. Catalog 25 cents.

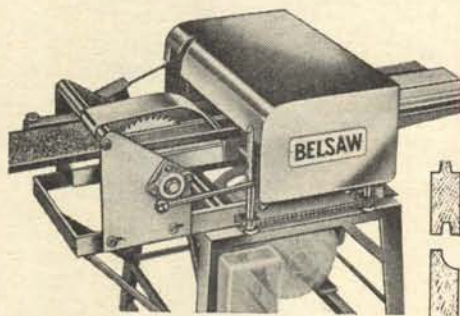
Minnesota Woodworkers Supply
Co., 1713 Olson Highway,
Minneapolis 5, Minnesota
Catalog 25 cents.

Art Veneers Co., (Silhouettes
and Shapes Limited),
Marquetry Works, Helmsley
Place, London Fields, E. 8,
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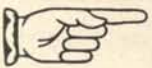
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Handy drop-front desk takes no floor space, projects only 8 in. from the wall when it is closed. Can be located in kitchen, even in narrow hallway.

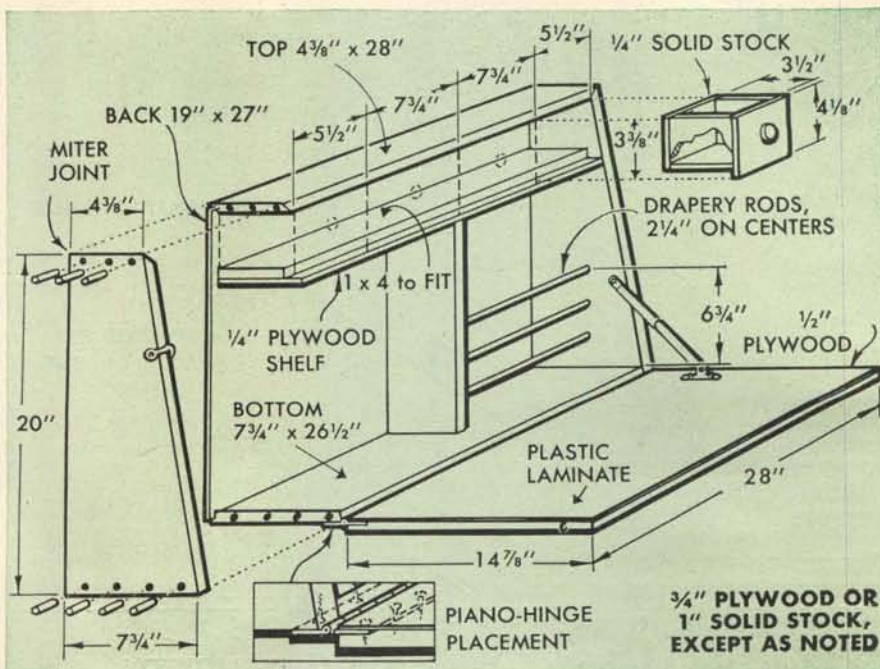
DROP-FRONT DESK

RALPH TREVES

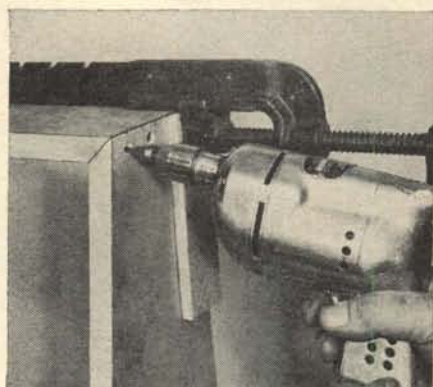
This easy-to-assemble drop-front desk was designed to provide a maximum of utility in a minimum of space. It hangs on the wall, so no floor space is required. When closed, the desk projects just 8 in. This means it can even be located in a hall, if lack of space is a prob-

lem. The generous-size writing surface is adequate for a housewife's record-keeping and is large enough for most homework projects a student might have.

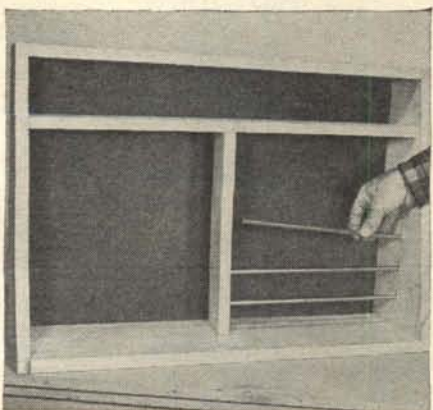
The sides of the desk are cut from 3/4-in. plywood or 1 x 8 solid stock, as are the top, bottom and hinged



drop-front. The top, bottom and two sides have $\frac{1}{4} \times \frac{1}{2}$ -in. rabbets cut in the back edge to accept a backing of $\frac{1}{4}$ -in. hardboard or plywood. A $\frac{1}{4} \times \frac{1}{4}$ -in. dado is cut across each side 5 in. from the top to accept a shelf cut from $\frac{1}{4}$ -in. plywood. The top and sides are joined with a miter, as indicated, held together with screws in counterbored holes, or with dowels. The bottom of the desk is butted against the inner surfaces of the two sides. Cut a vertical divider 4 in. wide, of a length that will fit between the bottom and the shelf. Drill three $\frac{3}{8}$ -in. blind holes, (about $\frac{1}{4}$ in. deep) in the partition and in the adjacent side, aligning them so brass rods fitted in them will be horizontal and equidistant. Fit the rods in the holes, then move the partition so the rods are snug, and attach it with glue and screws. The drawers for the top shelf are simple boxes. Attach the drop-front with a continuous hinge and two folding supports. $\Delta \Delta$



Sides and top are mitered, held together with glue and screws fitted in counterbored holes. Bottom and sides are butt-jointed.



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Colonial Coffee Table

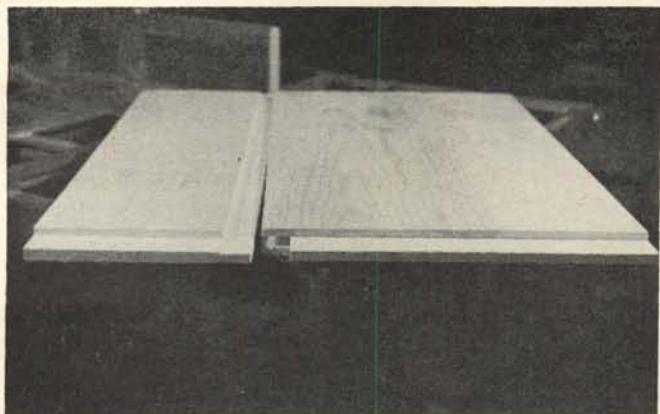
PATRICK K. SNOOK

Judging from the number of cobbler's-bench coffee tables around, it would seem that the average colonist had more shoes than toes. When I tried to find something different in the way of Early American furniture to use as a living-room coffee table, I had little luck. The era produced some beautiful tables, but almost all were end or dining tables. I did find a very attractive "Shaker" trestle-style dining table of early 18th century vintage. After a few hours on the drawing board I wound up with a scaled-down version that is an ideal coffee table, and which retains the design elements of the full-size unit.

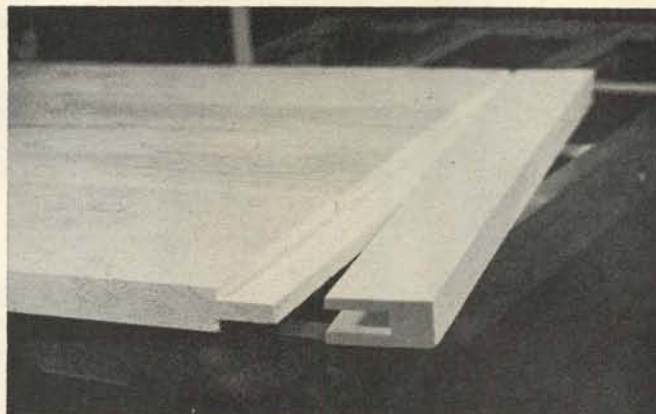
It is a simple project to build. All you need are a saw, drill, hammer, some sharp wood chisels and an armload of sandpaper. Construction starts with the top. You will need two 1-in. pine planks (avoid knots unless they are rock-solid), 41 in. long and wide enough to produce a combined width of 19 in. when placed side by side. The inside edges are joined with a tongue-and-groove joint 1 in. deep. Figs. 1 and

4. If you cut a tongue-and-groove joint on a table saw I have found it's a great time saver to fit a $\frac{1}{4}$ -in. dado blade and crank it up to the required height, 1 in. Adjust the blade as close as possible to the center of the edge of the board, then make two passes. On the second pass, reverse the ends of the board. This way you will end up with an odd-size groove, but its sides will be exactly equidistant from the respective surfaces of the sides. Now, take the other plank, set the dado blade so that it produces a tongue slightly wider than the groove and make a pass on each side. Check the fit, raise the blade a fraction, make another pass on each side and check the fit again. Keep repeating until you have an exact tight fit. It takes a little longer this way, but I've found that I end up with a far better job and eliminate the possibility of finding myself with a groove that is $\frac{1}{4}$ in. wider than the tongue, or surfaces that are not flush.

Smear the joint with glue, assemble and clamp.



1. Two 1-in. boards used for the top are edge-glued, using a tongue-and-groove joint cut with a dado blade on the saw.



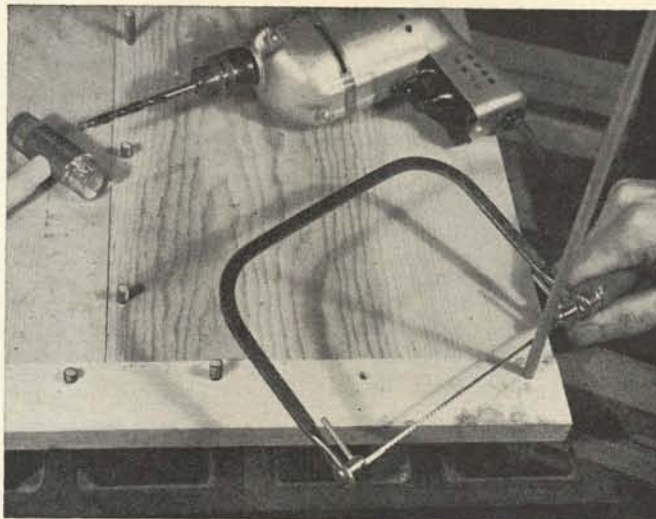
2. End pieces for the table top also are fitted with tongue-and-groove joint. Use clear, straight-grained stock for top.

When the glue is dry, cut and fit the $1\frac{1}{2}$ x 18-in. stretchers in the same manner, Fig. 2. When the complete assembly is good and dry, drill holes for the pegs (dowels). Squirt a few drops of glue in the holes and drive in the pegs. I usually cut the pegs about 2 in. long and drive them in so they project about $\frac{1}{4}$ in. below the underside, Fig. 3. After the glue dries, cut off the pegs close to the surface, then sand flush. Putting glue in the holes keeps it off the exposed surface of the table, and using long pegs avoids having to sand out hammer marks. The edges and corners of the finished top should be rounded and, if desired, "worn" or distressed with a rasp. If you are interested in authenticity, remember to "wear" the edges well, but irregularly, and only where they would get this way from years of actual use.

Cut the two 2 x $13\frac{1}{2}$ -in. upper cross braces, sand the edges smooth and lay them aside for a moment. Take the two $4\frac{1}{2}$ x $16\frac{1}{2}$ -in. legs and trim one end of each so you have a tenon about $\frac{1}{2}$ x 2 x 4 in. The dimensions do not have to be exact unless you plan to cut the mortise with a mortising chisel on a drill press. In that case, make the tenon exactly $\frac{1}{2}$ in. wide to fit the standard mortise-chisel width.

Lay out and rough-cut the $1\frac{1}{2}$ x 3 x 14-in. feet and number them. Place the tenon end of one of the

legs on top of one of the feet and carefully mark for the mortise, Fig. 5. Number the leg to correspond with the foot, and repeat on the remaining leg and



3. Glue is wiped in holes, then lengths of dowel are driven into the holes. Cut off excess after the glue has dried.

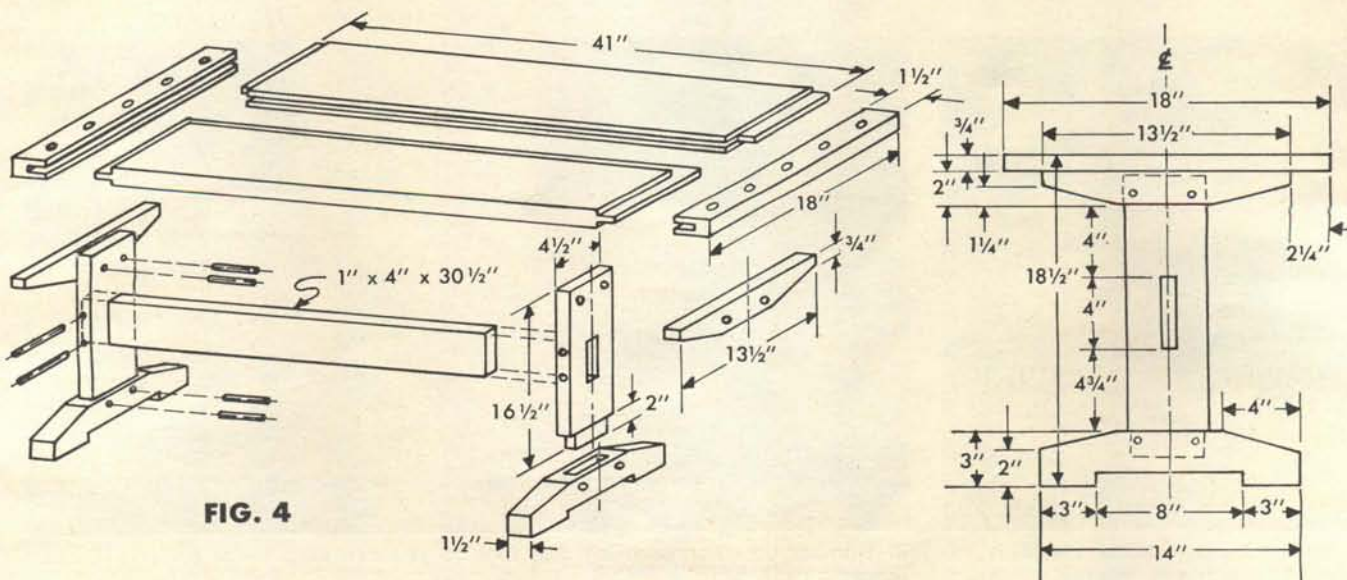
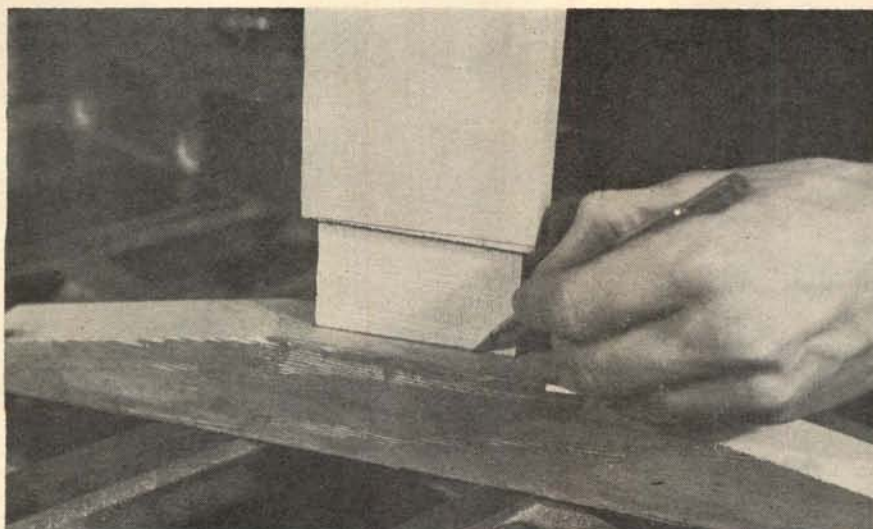


FIG. 4



5. After cutting tenon on the end of each leg, hold it on the foot to which it will fit and mark for the mortise. Drill and chisel mortise for snug fit.



6. If you do not have drill press, use undersize drill to make row of holes.

foot. The guide cuts for the mortises are made by drilling a row of holes, the diameter of each being slightly less than the required width of the mortise, Fig. 6. Take care to drill the holes at right angles to the top of the foot. Finish the mortise with a small, sharp chisel, Fig. 7, and check the tenon for fit. It should be snug enough to require a force fit, Fig. 8, yet not so tight that the foot will split when the leg is driven home. Before assembling, finish and sand both parts.

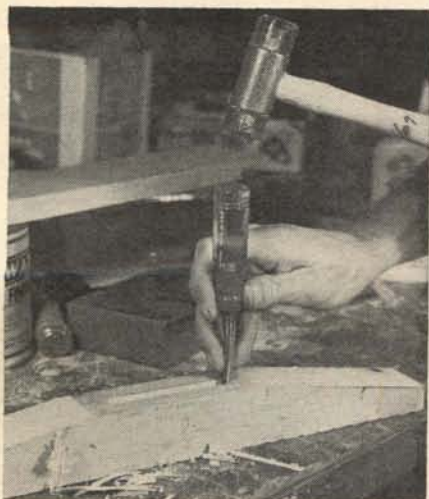
The 4 x 30½-in. trestle, (lower cross brace), should now be cut and the holes for it in the legs marked off and chiseled out. The feet may now be assembled to the legs, and the upper cross braces glued and clamped to the tops of the legs. When fitting the upper braces, it is a good idea to have the legs loosely fitted to the trestle and the whole assembly resting, upside down, on the table top. This way, you can correct for any minor deviation in alignment.

When the glue has dried, drill the twelve ⅜-in. holes for the brace pegs—2 on each foot-leg, leg-trestle and leg-cross brace joint, add the glue and

drive in the pegs. Again, the glue goes in the hole, and the pegs should be long. When you drill the holes, make sure you use a properly sharpened bit. A dull one can give you oversize holes and a sloppy fit for your pegs. When the pegs have been sanded down, all that is left is to fit the top; there are two ways to do this.

The top is anchored to the ends of the upper cross braces with screws. The quickest way is to turn the table upside down and countersink a screw from the bottom of each cross-brace end. The alternate method is to locate your screw positions on the top of the table and sink ½ or ⅝-in. holes ½ in. deep at each end. The screws then are driven down from the top and each hole is plugged with a length of dowel.

Choice of finish is up to the builder. If you want that soft brown "aged pine" look, I've found that a careful application of Miniwax Early American stain, darkened a bit with a little dark-oak stain and black paint, gives a warm color almost indistinguishable from that of pine several hundred years old. Apply a few coats of clear sealer to provide a softly-glowing, alcohol, water and heat-resistant surface. △ △



7. Narrow, sharp wood chisel is required to clean out mortise.



8. Number or letter each leg and foot so you can keep them paired. This will assure a neat, snug joint that will look good.

NEW TOP for a table

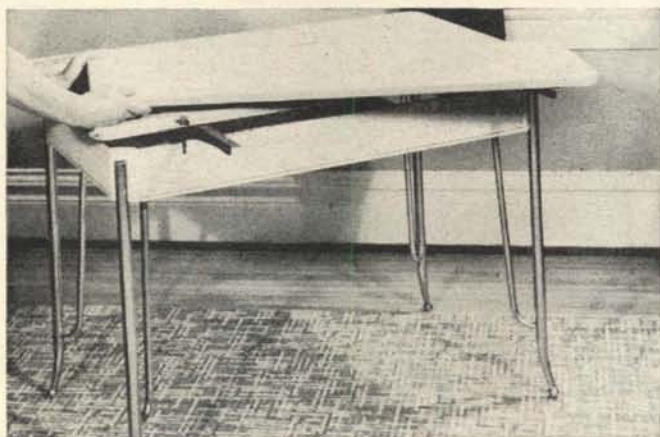
Years of service can be added to the life of a table that has a good frame but a worn and damaged top, simply by installing a new top with an attractive, easily cleaned plastic surface, Fig. 1. First step in the renovation is to remove the old top and leaves, Fig. 2. Use them as patterns to cut new members from $\frac{5}{8}$ or $\frac{3}{4}$ -in. plywood. Next, cut pieces of plastic-surfaced hardboard (Marlite), to fit these new members. Use wallboard cement or contact adhesive to attach the surfaced hardboard to them. The adhesive is best applied with a notched trowel, Fig. 3. For a really finished appearance, apply strips of the hardboard to the edges of the plywood members also, Fig. 4. The top and leaves now can be replaced on the frame, Fig. 5. Use the original hardware, unless it is badly worn. In that case, take the hardware with you when you purchase new items, to be sure the new



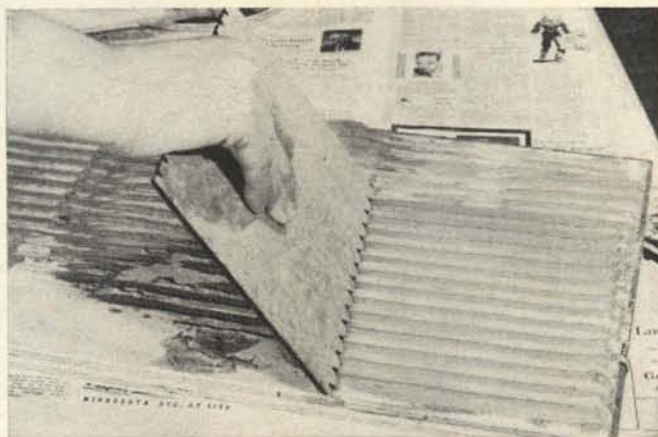
1. New lease on life was given to this table by making new top and leaves from $\frac{3}{4}$ -in. plywood and Marlite.

hardware is exactly the same as the original.

Plastic-surfaced hardboard can be cut with a hand or power saw. Position the finish side so the teeth of the blade cut against the face, which will prevent chipping. For instance, with a hand saw, the plastic surface should be up, with a table saw the same is true. When cross-cutting with a radial-arm saw the surface should be up, when ripping it should be down. $\Delta \Delta$



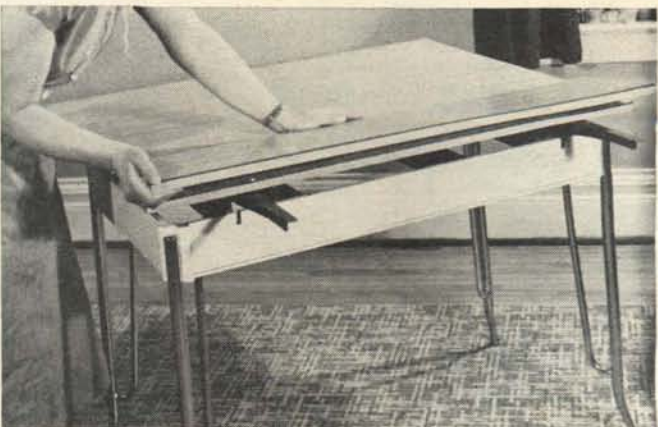
2. First step in renovation is to remove old top and leaves. Use them for patterns to cut new pieces of $\frac{3}{4}$ -in. plywood.



3. Wallboard adhesive is applied to the plywood with toothed-trowel. Contact adhesive also can be used for strong bond.

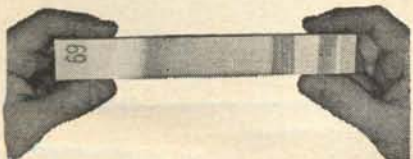


4. Strips of Marlite also can be used to cover edges of the table top and leaves. This gives finished look to the job.



5. After applying Marlite, table top and leaves are refitted to the table frame. Use original hardware.

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| 6 Antique Platinum | 63 Driftwood |
| 9 Natural Mahogany | 64 Maple |
| 10 18th Cen. Mahogany | 65 Walnut |
| 11 Brown Mahogany | 65-1 Pecan |
| 12A Brown Oak | 66 Mahogany |
| 20 Limed Oak | 67 Maple-Cherry |
| 30 Light Fruitwood | 67-1 Brown Birch |
| 31 Fruitwood | 67-2 Light Maple |
| 32 Light Brown Maple | 68 Philippine Mahogany |
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Now on the market is a finish that is applied in a two-step process to produce an attractive marble-like finish on almost any surface. The material can be applied to wood, plaster, even over wallpaper, and it dries quickly to a hard, washable finish. This means you can create complete "marble" walls, Fig. 5, as well as "marble-top" tables, as in the lead photo.

A base coat is applied first by brush, roller or spray; dries to a uniform flat finish. Colors of the base coat are antique white, beige,



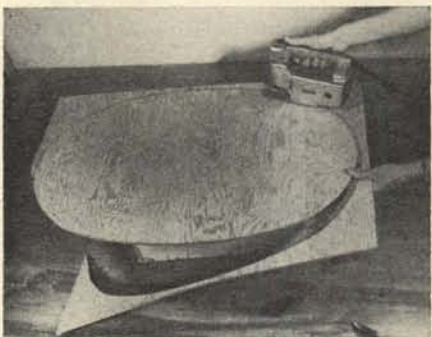
gray or black. When the base coat is dry, a second coat, called the Marbleizer, is applied. The Marbleizer is available in metallic gold, green, blue, pink, beige, off-white and black, and must be applied by spray. The material comes out of the gun in a web-like pattern, and this pattern is retained until the



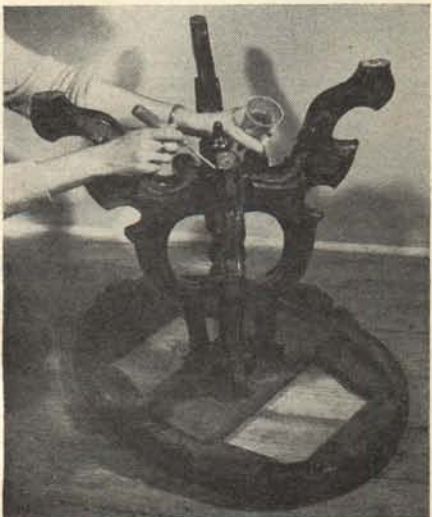
1. Trace the outline of the top on a piece of 1/2-in. plywood, using 3/4-in. block as spacer to create overhang.

material strikes a surface where it dries almost immediately. A special attachment for vacuum cleaners is available to spray the Marbleizer.

As an example of what can be done with the material, an old Victorian table with its marble top missing, lead photo, was picked up



2. Quickest way to cut top is with power jig saw; if you have only hand tools, time is the only difference.



3. To avoid disassembly, dilute household cellulose cement with lacquer thinner, run it into any loose joints.

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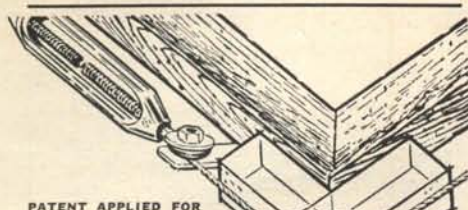
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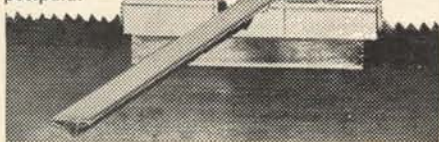
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4. To produce simulated-marble finish, use background paint, special marblizing material that makes marble streaks, and special spray gun.

5. Marbleizing paint can be sprayed on walls for easy-to-clean finish. Appearance improves as the finish ages.



in a second-hand store. The outline of the frame of the top was traced on a piece of 1/2-in. plywood, Fig. 1. A 3/4-in. block was used as a spacer to provide the usual 3/4-in. overhang of marble tops. Hand or power tools permit cutting out the top in just a few minutes, Fig. 2.

To eliminate the need for disassembling the table because of a couple of loose joints, ordinary household cellulose glue was diluted with an equal amount of lacquer thinner. The resulting thin liquid then was poured into the loose joints, a spatula or screw driver holding the joints open slightly, Fig. 3.

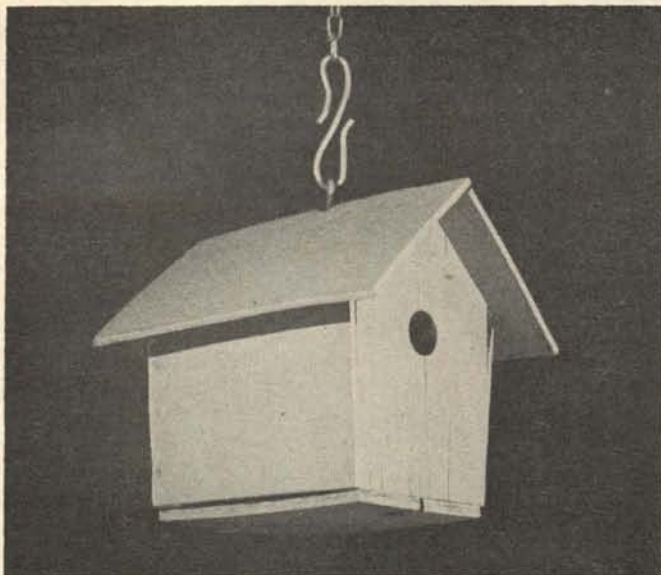
The cut-out top then was given a base coat of antique white, followed by quarry black marblizer applied with a spray, Fig. 4. The resulting attractive table is shown in the lead photo.

The base of the table, of course, is stripped and finished, or simply finished, as required, before in-

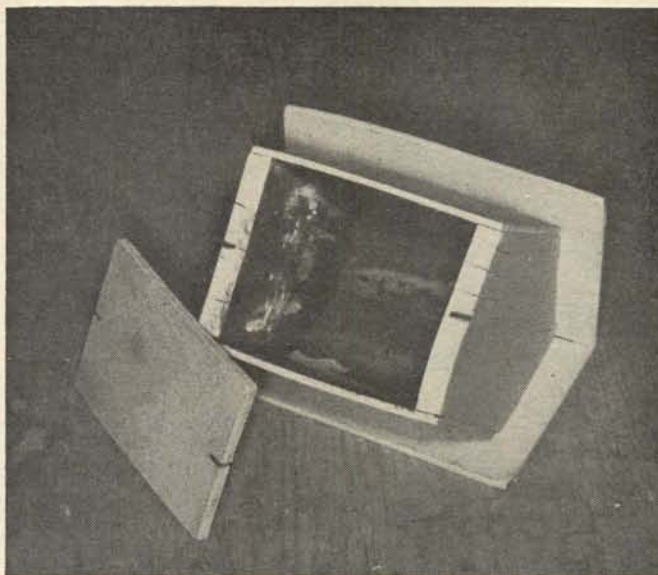
stalling the marbled top. For more information on this interesting finishing material: Breicraft Antique Marble, Breinig Brothers, Div., 2129 McCarter Highway, Newark, New Jersey.

Treasure Metallic Finishes

Treasure Gold is a decorative wax gilt that can be used for restoring or highlighting gold leaf, as was used on antique picture frames and furniture. Can be applied with effects ranging from semi-transparent metallic glint to the full luster of plating. Available in Gold, Silver, White Fire and Renaissance. Applied with finger or cloth, then buffed. Can be applied to almost any surface. 1 1/4-oz. jar will cover 10 to 12 medium-size picture frames; price is \$2 from Connoisseur Studio, P. O. Box 7187, Louisville, Ky.



Roof and sides of tempered hardboard are nailed to $\frac{1}{2}$ -in. wood ends of this wren house that is hung from a tree limb.



View of opened bottom and interior. Two L-hooks unlock the floor for removal of nest which wrens do not re-use.

Easy-to-Make WREN HOUSE

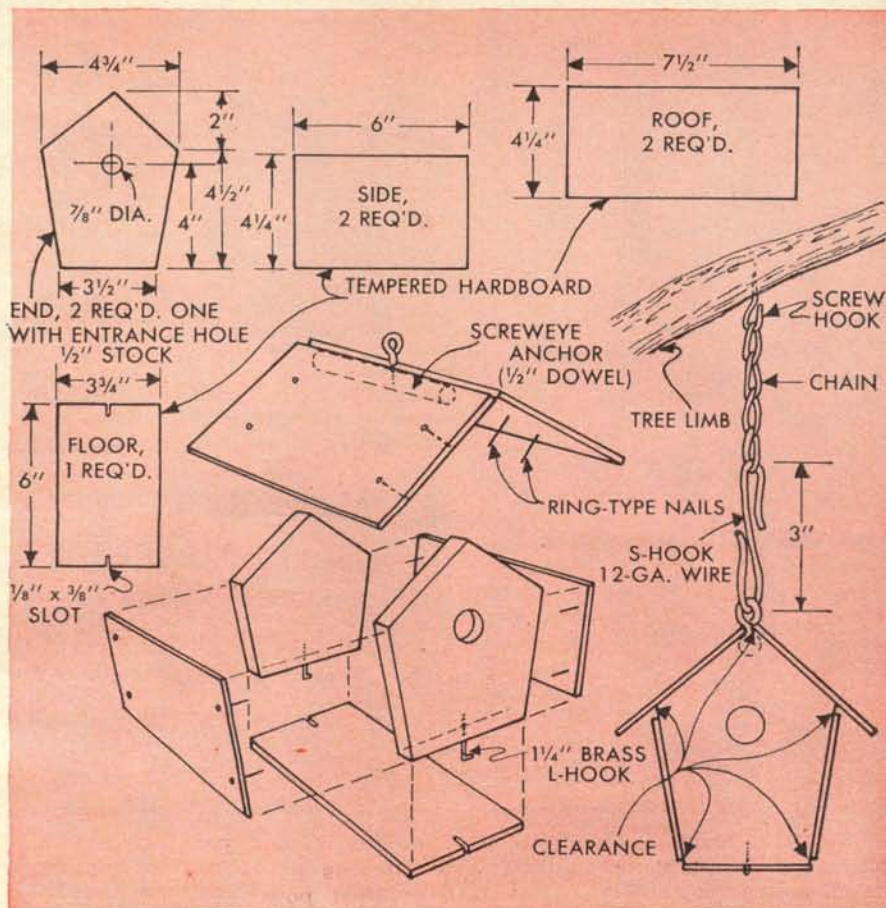
ENNO R. HAAN

An hour's time is all you need to make this little wren house. If you want to make up a quantity of these for sale, you saw a number of identical pieces at once.

The house shown in the photo has been in use for 12 years, and neither the nails nor the L-hooks have loosened. Nails were ring type and the outside surface was protected by an occasional coat of paint. Color of a birdhouse should not be bright; a soft green or brown is best. Allow paint to dry for several weeks so that all traces of odor will have disappeared when the wrens arrive. Therefore this is a good winter project to make and put away until spring.

It's a great convenience to have a floor that is easy to open for cleaning each fall. Two brass L-hooks hold the floor in place and are simply turned outwards to release it. A little clearance between the roof, sides and floor permits desired air circulation. Small holes for the nails are drilled through the hardboard, particularly at edges. As wrens fly directly through entrances, no perch is needed.

The house should be 6 to 10 ft. above the ground. To hang it, drive a screw eye into a dowel or short stick held inside at the ridge. The dowel does not need any other fastening. Attach a length of light chain to the screw eye directly or by means of an L-hook. Drive a screw hook into a tree limb and pinch the head shut after attaching the chain. $\Delta \Delta$



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Women's Page

Decorate With Racks

NANCY TOOLIN

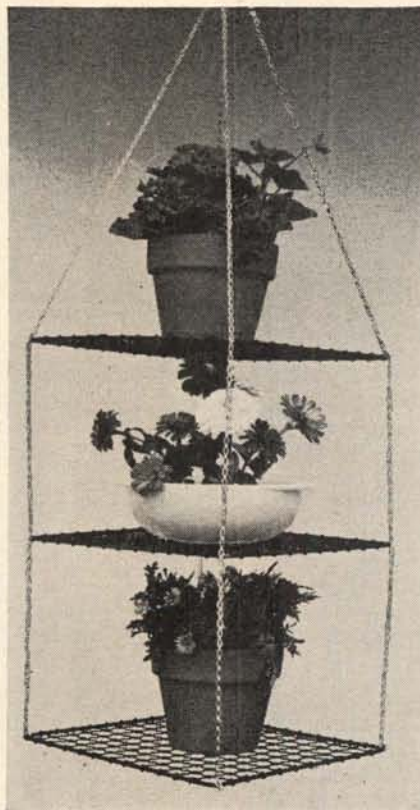
If you are watching the budget, try adding a few decorative and useful accessories to your home and patio by using the racks, or shelves, from discarded ranges and refrigerators. Appliance dealers who accept trade-ins usually have these items they will give away. Wire-brush the racks to remove loose rust, then spray with rust-preventive primer of the type that is tinted in various colors.

The hanging rack is three of the

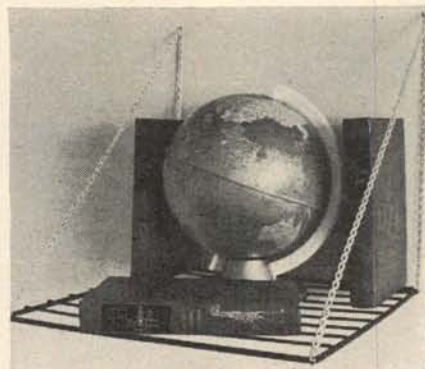
shelves suspended by inexpensive brass chain available at hardware stores. Experiment with string to get the right spacing.

The hanging shelf uses two equal lengths of chain that are wired to the rack and held to the wall with wood screws.

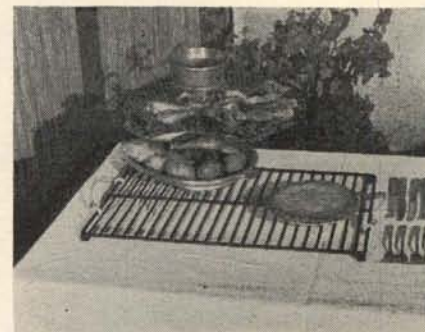
The super-size trivet is a rack with four wooden blocks for legs. The handles are lengths of rope, the loops held firmly by wrapping with fine copper wire.



Four lengths of brass plumber's chain, available at hardware stores, holds three racks to display flowers.

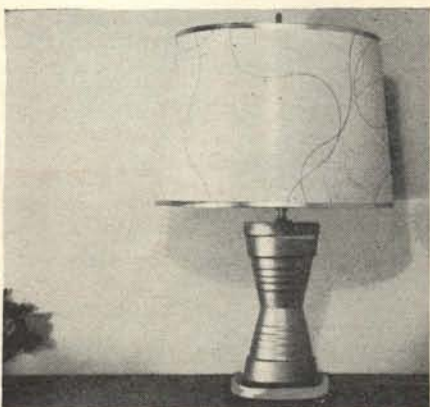


Unusual hanging shelf requires two equal lengths of the chain wired to a rack. Screws in wall hold the assembly.



Super-size trivet is great for protecting patio table or kitchen counter from very large pans, trays fresh from the heat.

FLOWER-POT LAMPS



Attractive lamp of modern design is inexpensive, being made from two ordinary clay flowerpots painted gold.

FRANCES M. CALLAHAN

Two or more ordinary red-clay flowerpots can be used to make attractive lamp columns such as in the photos. Two 4-in. pots were used for the lamp shown. Pots are sized by the inside diameter at the top; the 4-in. pot measures about 4½ in. outside. A wooden disk is cut from 1-in. solid stock or ¾-in. plywood for a cap at the top of the lamp and for a base. The cap for the lamp described was 4½ in. in diameter, the base is 6½ in. Drain holes in the pots were enlarged with a rat-tail file to accept the electrician's pipe. Four small rubber-headed tacks were driven into the bottom of the base to provide clearance for the lamp cord and to protect surfaces on which the lamp is



Lamp harp, socket, electrician's pipe, finial and wire are fitted to clay pots that are glued together.

set. The lamp shown was sprayed with gold paint; other colors can be used. The pots cost about 15 cents each, the lamp parts ran about \$1.75.

Driftwood Plant Display

Scraps of wood and a well-formed branch of driftwood are all you need to make this project that will be attractive almost anywhere in the home—or for use as a centerpiece.

When hunting driftwood, look for larger branches that have smaller sections that can be cut out and used; more attractive compositions will be found this way. Even



"Well-composed" branch and wood base provide attractive setting for simple plant. Trim branch as needed.



Either a hand or power wire brush can be used to remove bark and dirt; it also smooths the surface.

branches found in the woods, or perhaps pruned from trees in your back yard can be used. Such branches will not have the patina that wind and salt water produce, but can be stained or painted.

The base can be almost any wood, but should be of a size to be in proportion with the branch. The base can have a regular form or can be a free-form pattern. Cut off the branch square at the bottom and attach it by driving screws up through the base.

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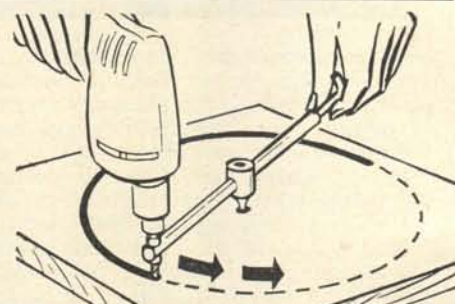
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MOISTURE METER

JAMES G. LEE, W6VAT



We all water our lawns heavily in the spring to get them ready for summer, and if we plant new lawns we try to make sure they are well watered. If you would like to be really sure the lawn is getting enough water, and that there are no areas getting too little or too much water, this moisture meter will prove invaluable. It is not difficult to build, and the parts are readily available from radio-supply houses that sell by mail. You might even have a radio-supply store in

your neighborhood; in the latter case, they can supply the parts from the list at the end of this article.

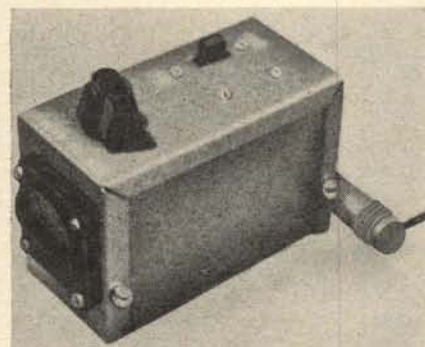
The meter is a simple electrical circuit, consisting of a meter, (dial), connected in series with two small flashlight dry cells and some series resistance to limit current flow through the meter. Both a pictorial and schematic drawing are shown to aid in constructing the meter. If you have had some electrical or electronic experience, you might prefer a different shape or size of box, and the location of the components can be changed without effecting operation of the meter.

Cut a groove $\frac{1}{8}$ in. deep the length of a $\frac{3}{8}$ x 4-in. dowel to accept the two probes cut and bent from coathanger wire. Two $\frac{1}{8}$ -in. holes are drilled through the groove and the dowel, $\frac{3}{8}$ in. on either side of the center of the dowel. Aligning holes, $\frac{1}{4}$ in. in diameter are drilled in the end of the meter box. Shouldered fiber washers are used to insulate the screws connecting the probes so they do not short against the metal box. The probes are 4-5/8" long, bent so 3 in. project. Scrape the long ends clean for 3 in., the short ends for $\frac{1}{4}$ in. Pieces of insulating "spaghetti" tubing 2-5/8 in. long

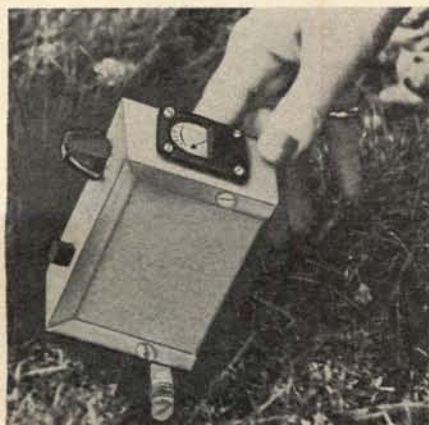
are slipped over each probe, the scraped ends being left exposed. Solder hole lugs to the shorter ends of the probes.

Next, drill all other holes in the metal box and mount the other components. Wire all connections except those to the probes. Fit a 1-in. x 6-32 machine screw through each lug on the probes, then through the dowel so the probes fit snugly in the groove. Slip the shoulder washers over the screws and insert the screws through the holes in the metal box. Two flat fiber washers are slipped over the screws, followed by No. 6-hole solder lugs and 6-32 hex nuts. Add the leads from the lugs on the probes to the No. 2 battery case and the switch. Add the bottom cover, wrap each probe with twine to hold it firmly, and the meter is ready for use.

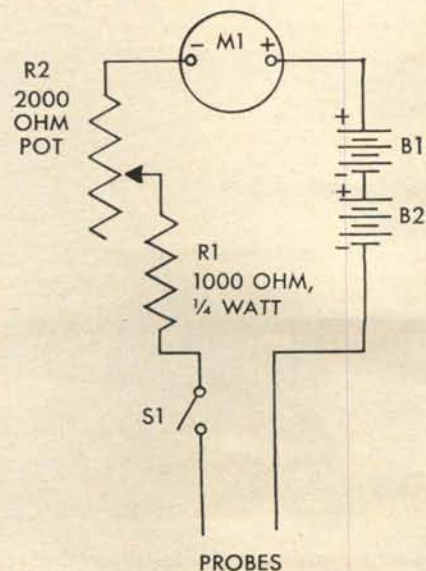
Turn the switch to "on"; the meter should read "0". Short across the probes with a screw



Probes of meter are forced into ground about 1 1/2 in. Moist soil gives high reading, dry soil gives low reading.



Check your lawn at several points to determine which gets the most water; adjust sprinkling pattern accordingly.



ELECTRICAL SCHEMATIC

driver and adjust R2 for exactly full-scale reading. R2 can be adjusted later, as the batteries age.

Inserting the probes in the ground to a depth of $1\frac{1}{2}$ in. should give an up-scale reading on the meter. With this meter, any reading over .5 indicates a wet soil; readings less than this indicate need for water. One hour of sprinkler operation usually gives a reading of .7 to .8 on the meter.

Check your lawn in several spots before and after you water. You

Relative positions of various components are shown here, with cover of box removed. Parts are available at mail-order houses.

Parts List

B1, B2—1.5-volt, type—7 Burgess flashlight dry cell or equivalent.

R1—1,000-ohm, $\frac{1}{4}$ -watt resistor

R2—2,000-ohm potentiometer, IRC type Q11-110 or equivalent.

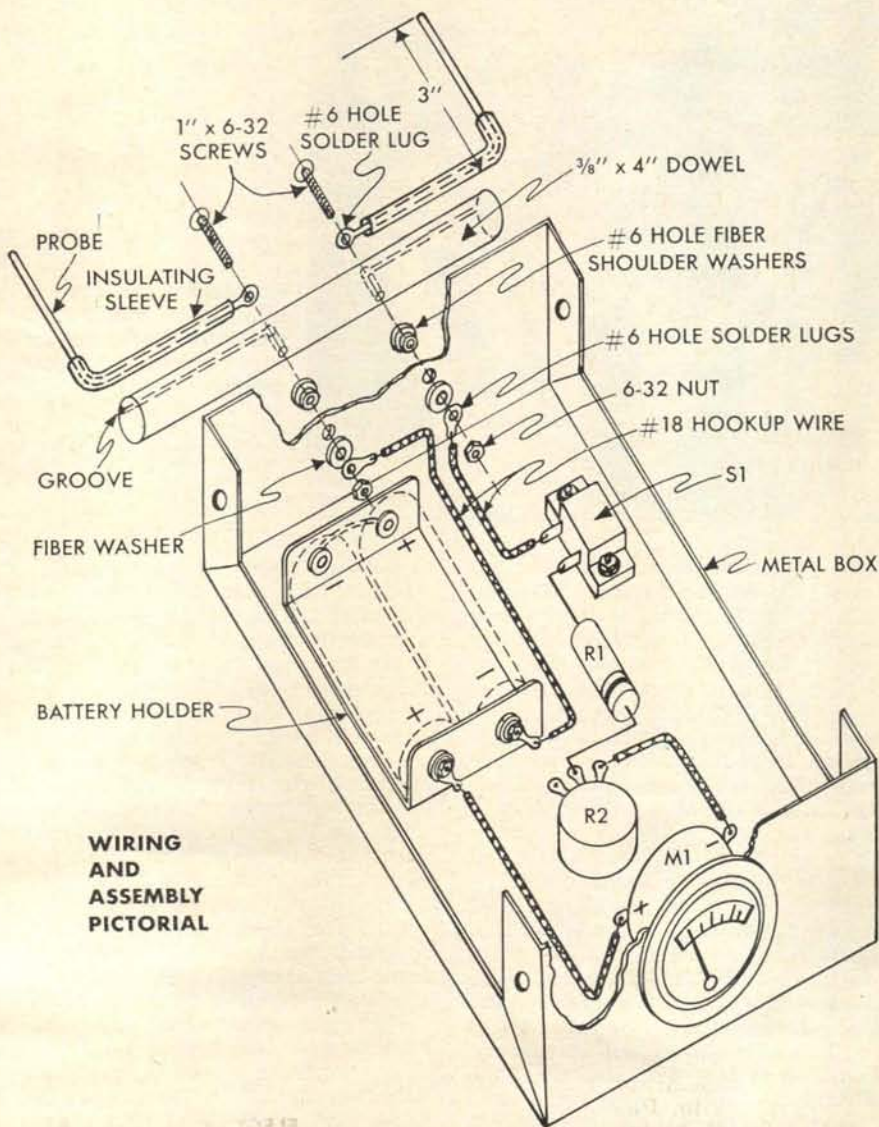
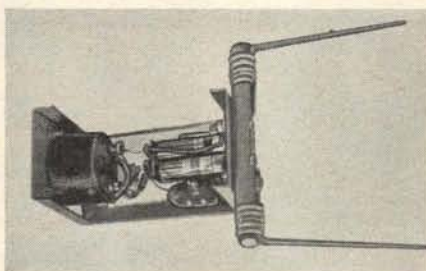
S1—Single-pole, single-throw slide switch

M1—0-1 milliammeter, $1\frac{1}{2}$ " dia.

Metal "Minibox", $1\frac{1}{2}$ " x $2\frac{1}{4}$ " x 4", gray hammertone finish.

Miscellaneous—Solder lugs, knob, wire, solder, nuts, bolts, etc.

will soon determine which areas of the lawn get the most moisture, and you can concentrate on the areas that do not normally get enough. The meter will help save water, and assure that all parts of the lawn get a good supply. $\Delta \Delta$



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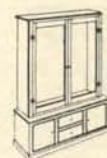
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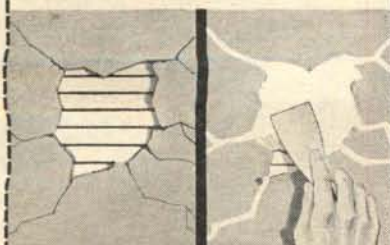
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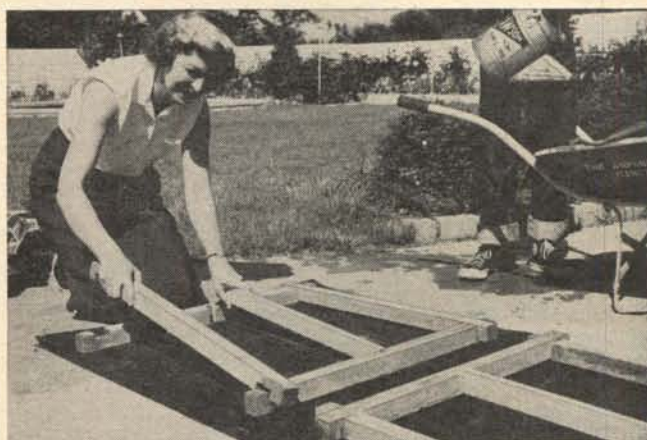
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Inside dimensions of forms are about 2 x 2 ft.; this requires one 90-lb. bag of dry-mix concrete and gallon of water.

Flagstones are cast in forms made from 2 x 2s, ends are notched for easy assembly, disassembly.

Have you been planning a walk for some part of your yard? Why not make it of flagstones that you cast yourself? Further, make each stone unique; imprint a date, such as the birth of your first child, or when you added the patio. Have the children make impressions of their hands, or feet, in the fresh concrete. The material will even accept the print of an item like a fresh leaf.

You need 10 or 12 lineal feet of 2 x 2 to make the forms. Notches near the ends of the lengths of lumber permit quick assembly and disassembly of the forms. One form you can divide in half, so it produces two flagstones. Keep the inside dimensions of the form about 2 x 2 ft. This area will require a 90-lb. bag of dry-mix concrete, such as Sakrete. Mix the concrete in a wheelbarrow or on a concrete

driveway, patio or garage floor.

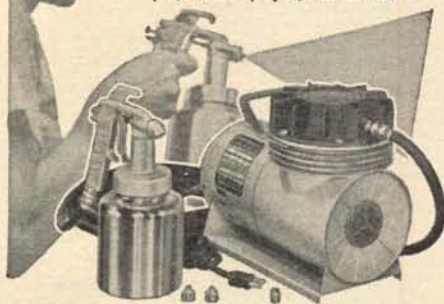
Shovel the mixed concrete into the forms, tamping it well. Level it with the top of the form using a straightedge board. Trowel the surface smooth, then let the concrete stand until the water disappears. Now is the time to make the impressions. If you want to use patterns, cut them from building felt or tar paper. Place the patterns on the concrete, then trowel over them to force them flush with the surface. Do not get too much concrete over the top.

Edges of the flagstones should be rounded, which is best done with a concrete edger you can buy in most stores where hardware is sold.

For a free copy of an interesting booklet that contains a number of other concrete projects, write to: Sakrete, Inc., P.O. Box 1, St. Bernard, Cincinnati 17, Ohio. △ △

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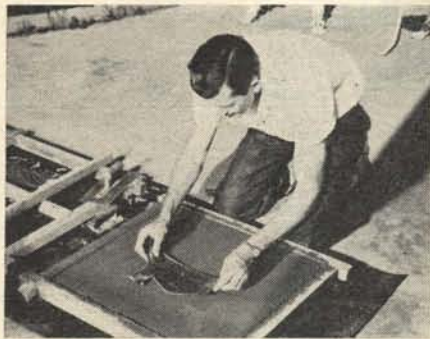
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Concrete is mixed in wheelbarrow or handy surface, poured in form, then tamped and leveled with straightedge.



Press pattern into concrete surface, trowel it firmly in place. Do not get too much concrete above the pattern.



Tar paper can be used as base under forms, also for making patterns of events you want to cast in concrete.



Children's hand and footprints are easily "printed" in the wet concrete. Even fresh leaves will make imprint.

Library Table

(Continued from Page 18)

The braces at each end of the table that fit against the underside of the top are simple shapes, the ends and lower edges being chamfered 45 deg. This brace helps make the table more rigid and minimizes any tendency for the top to warp or bow. It is glued and pinned to the end aprons. For modern construction, counterbore holes in the lower edges of each brace to permit driving screws up into the top. For a completely finished appearance, you may want to plug the holes with dowels or plugs cut from solid stock with a plug cutter, such as the Circle-Sink type.

The front-to-back partition between the two drawers can be made as an upper and lower strip. This would permit driving screws up through the upper strip into the top. This line of screws, along with those in the end braces should be sufficient to hold the top rigidly in place.

The front apron of the table consists of two strips, the lower strip being rabbeted to accept the upper. The lower, rabbeted, strip is 2 in. high, the rabbet is $\frac{1}{2} \times \frac{1}{2}$ in. The upper strip, against which the drawer front bears, is $1\frac{1}{2}$ in. Note

that there are lips on the sides and bottom of the drawer front, but not at the top. There is no strip across the top for the drawer front to contact. Drawer fronts are rabbeted on the three edges to produce $\frac{1}{4} \times \frac{1}{4}$ -in. lips that are rounded as indicated.

Drawer fronts are 1 in. thick, the drawer sides are $\frac{5}{8}$ in. Sides and front are joined with mortise-and-tenon joints. Tenons on the end of the drawer back fit in mortises in the sides. The drawer bottom fits in dados cut in the front, sides and back. The dado is $\frac{1}{4}$ in. above the rabbeted edge of the drawer fronts. The bottoms are $\frac{1}{4}$ -in. stock, plywood or hardboard.

Pulls on the drawers are turned wooden knobs. We might mention here that while the shallow groove in the side and back aprons was probably cut by hand with a gouge or scratch stock, a shallow saw kerf or groove cut with a router will do just as well. Keep in mind that an occasional mistake or wavering line will add character to the table. If you machine the table exactly true, square and with no touch of error, it will not be a true copy. This is one of the delights in making a copy of an antique piece of furniture from a museum. $\Delta \Delta$

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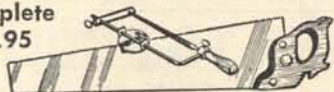
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WORKBENCH

Research Department

Each issue in this column we will choose questions on home and shop subjects from letters sent to us. Only those questions which have wide appeal will be answered here. Questions on specialized subjects will be answered by individual letter from the Research Editor's Desk.

Have been considering buying a power trimmer as my shrubs and hedges now require more grooming than I can handle with hand shears. However, notice that my neighbor has considerable trouble with his power trimmer, and seems to take as long or longer than I do on the job. Should I buy a power trimmer?

Mr. R. C. L., Ohio.



By all means, buy a power trimmer. Modern tools take the hard work out of shrub and hedge care, leave you time to enjoy the yard instead of working on it all the time. Your neighbor might have a poorly designed trimmer, but probably is not keeping it sharp, or is not using it properly. Garden experts at the Skil Corporation in Chicago timed typical shrub and hedge-trimming jobs and found that power trimmers get the work done in one-eighth the time of hand methods. Power trimming also makes it easier for the amateur gardener to clip in a straight line.

Some helpful suggestion by the Skil experts: Trim hedges so the base is as wide or wider than the top. This allows the sun to reach lower branches, eliminates "top-heavy" hedge. Tilt your power trimmer so the cutting edge of the blade points down about 15 deg. The blade tips then pick up growth more easily for faster, cleaner cutting. Reverse the direction of trimming each time

a hedge top is cut, to prevent the branches growing or "leaning" in one direction. Trim and prune hedges when they need it. Fast growing hedges like Privet need it about once a month, several times a season is enough for slower-growing evergreens such as Hemlock and Yew. For best performance, clean and oil the cutter blade of your power trimmer after each use. This removes saps, gums and leaves, prevents overloading the motor.

In the interior of my home I used 1/2-in. plasterboard on the walls and ceilings, fastening it with coated nails. Several months after the completion of the job the nails began to "pop" out of the plasterboard and continue to do so, although the rate has decreased. The house is now 2 1/2 years old. What can I do about the situation, and what caused it?

J. B. M., Cambridge, Minn.



There are a number of factors that cause popping nails in plasterboard, but the most common is due to the stabilization of lumber in the framing, which may not have been seasoned thoroughly or was wet at the time of installation. We note you mention that the "rate has decreased", and this gives us an almost sure clue as to the basic cause. The rate will continue to decrease, although slowly. There is little you can do in the meantime, except possibly to reseat the nails and retape and replaster the joints. Naturally, we hesitate to suggest this, but in reality it is the only thing to do. In time there is every possibility that the trouble will cease and you can make a permanent repair.

Can you tell me where I can get information on making wooden frames that hold the foundation inside beehives? Also, would like information on making your own foundations from beeswax.
P. L. C., San Antonio, Tex.

There are several books on beekeeping and you may locate one or more in your local library. Usually these give some information on the construction of hives and fittings.

However, frames and foundations are so cheap that it is doubtful if it would pay to make them yourself. The required clear stock at present retail lumber prices is quite expensive. Beekeeper's supplies are listed also in Ward's Farm Catalog.

I built a 30 x 48-ft., 3-bedroom ranch-type home three years ago that has insulation board under the wooden siding. There is fiber insulation above the ceiling, but none under the roof that has asphalt shingles. We have some boards over the ceiling joists to provide storage that is accessible by a "disappearing" stairway. There is a louver 1 ft. square in each end of the attic. My concern is that the attic space gets so hot, well above 100 deg. Should I insulate under the roof to reduce the temperature?
L. H. S., West Edmeston, N. Y.



Your attic is hot because there is inadequate ventilation. A rule that has proven quite accurate is to provide 1 sq. ft. of free louver area for each 100 sq. ft. of attic floor area. Your attic needs about 14 sq. ft. of louver. Or, you can install an attic fan and install screened vents in the soffits to permit air to enter. A properly ventilated attic does not need insulation between the rafters under the roof; neither does condensation give trouble during the winter.

The hot-air registers in my home are located on the inside walls about two feet below the ceilings. The cold-air registers are on the outside walls. I have been considering converting the arrangement to a perimeter type, using the present hot air pipes for cold-air returns. We do not have a heating consultant available in this area, but I have been told by those who profess to know, that having cold-air returns near the ceiling does not prove too satisfactory. In your opinion would the perimeter arrangement prove more satisfactory if the converted hot-air ducts were cut back to floor level?

R. O. H., Wis.

You do not say that the heating system presently installed is giving unsatisfactory service. If it is satisfactory, why change as you propose? You might gain something in air distribution, but in heat output there would be no gain. If the furnace is adequately heating the house now, we would hesitate to recommend any change.

What brand of gold paint is best to use over paint on wood, and is there a manufacturer of such a paint in my area?

Miss K.L.G., Huntington Pk., Cal.

By "gold paint" we presume you refer to a bronzing paint rather than a paint containing genuine 14-karat gold. You should be able to purchase gold paint (bronzing paint in gold color) from any paint store in your area.

If, on the other hand, you are referring to genuine gold gilding paint, then write Competition Chemicals, Box 141, Iowa Falls, Iowa, or inquire of your local paint dealer. If he does not stock the item he may be able to obtain it for you. Naturally, it is quite expensive.

I plan on painting my house myself this year. It is a ranch-type with asbestos shingles. What paint is best to use? Does white become dirty quicker than other colors, and do some colors fade quickly? What time of year is best for painting?

J. M. M., Ontario, New York.

Use a paint made especially for application over asbestos shingles, which should be obtainable at your local paint dealer. If he does not stock it, then order from one of the large mail-order houses. Modern paint colors do not fade as did the older earth colors. Paint can be applied any time the surface is dry and the temperature above 60 deg.

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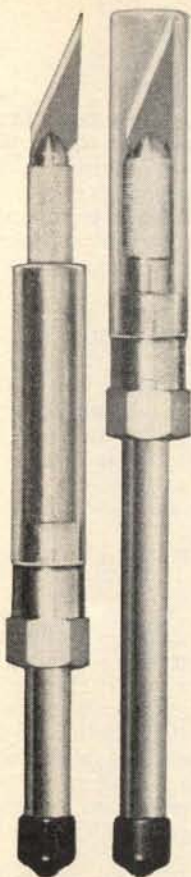
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R. S. C., Waterloo, Iowa.

Through, or two-way fireplaces are seldom satisfactory simply because it is not possible to build them correctly. Usually the flues are straight, of inadequate size for the opening and generally there is no wind shelf, which is essential if a fireplace of any type is to operate satisfactorily under all weather conditions.

If you brick up one open side and bring the bricks in by proper corbeling so that a wind shelf can be provided, the unit likely will work reasonably well. This is the only remedy we have to offer that we consider practical. Obviously, we hesitate to recommend the procedure because of the expense involved.



We have bought an old house that has what appears to be a sand-finish paint on the ceiling of the dining room. This finish is falling off in large patches, but what stays on is rock hard and has to be chiseled off. The chiseling is back-aching work; what can we do to simplify this job?

Mr. H. E., New York.

What you can do depends on whether the plaster actually has a sand finish, or has been coated with a special paint mixed with fine sand. If the sand has been mixed in the plaster itself, your job of scraping and chiseling is hopeless; you can't get it off because it is in the plaster. If smooth plaster has been coated with sand-in-paint, a paste-type paint remover can be used to take off the paint.

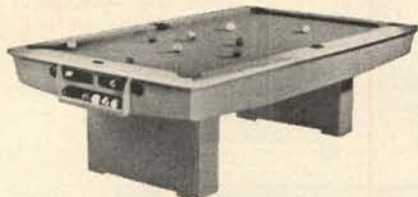
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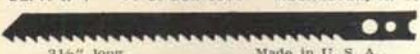
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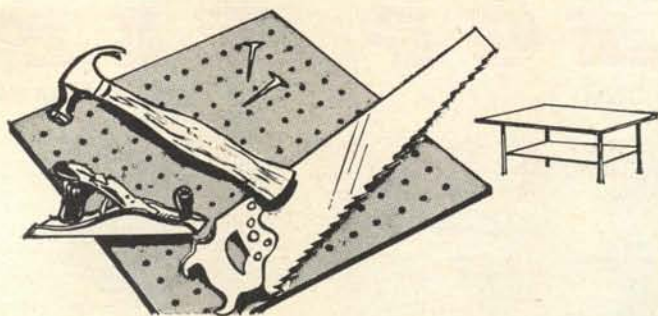
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DEVELOPING A Home Workshop

Your first decision should be to determine where to set up a shop. Remember, this is a workshop, and should be where an unfinished project can be left without causing pain to even the tidiest housekeeper. Best locations are in a basement, garage or carport. Make sure there is plenty of light; if there are no windows, have plenty of artificial light. Be sure the wiring at that location is adequate for any power tools you might want to use. Keep the shop away from the furnace or any mechanical equipment that will need frequent attention. Also, sawdust will quickly clog the filters of a furnace.

You will need a workbench; it can be made or purchased. Now you are ready to select the tools. Do not buy low-priced tools that will not do the job. You need tools that will keep their cutting edges, that will not break readily, and that will be accurate. You can buy a complete tool chest with a selection of hand tools, or you can pick up one or two items at a time and build a matched set. The latter is the least expensive way, though it takes more time. Stanley Tools, New Britain, Conn., has a matched set of popular-priced tools, and suggests the following as a good selection. Start with the first ten on the list, and add to the set as you need the tools.

1. 13 or 16-oz claw hammer.
2. Cut-off (cross-cut) saw, 22 to 24 in., 10 pts.
3. Jack plane, 11½ to 14 in.
4. 6-ft. zig-zag rule or steel measuring tape.
5. 12-in. combination square.
6. Screw driver with 4-in. blade.
7. Hand drill with set of bits.
8. Two wood chisels, ¼ and ¾-in. widths.
9. Bit brace with 10-in. sweep.
10. Auger bits; ¼, 5/16, ¾, 7/16, ½, ¾ and 1 in.
11. Marking gauge.
12. 3 nail sets, 2/32 and 4/32-in. points.
13. Combination oil stone, 1 x 2 x 8 in.
14. Oiler.
15. Rip saw, 24 to 26 in., 5 pts. to inch.
16. Screw driver with 6-in. thin blade.
17. Pair of 6-in. pliers.
18. Bit gauge.
19. 6-in. block plane.
20. 3 screw driver bits; ¼, 5/16 and ¾ in. for brace.
21. Woodworking vise.
22. Back saw, 12-in. blade, 14 pts. to the inch.
23. Coping saw.
24. Knife, preferably in safety handle with extra blades.
25. Half-round cabinet file, 10 in. long.
26. Brad awl, 1½-in. blade.
27. Countersink bit.
28. Spokeshave.

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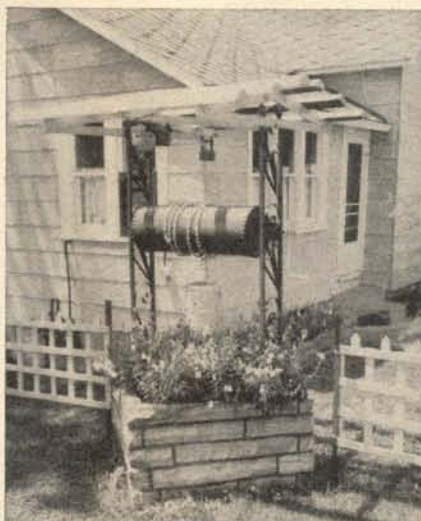
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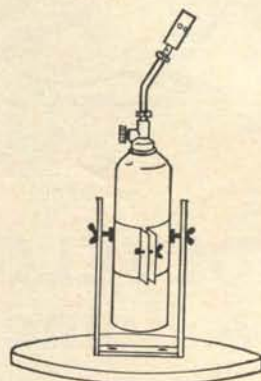
Wishing Well



This attractive wishing well is made of split stone over a poured-concrete foundation. Ornamental-iron uprights, such as used on porches, are used as roof supports. The roof is of split cedar logs. The "drum" is a discarded air-storage tank, commercial chain supports the wooden bucket that is an old keg, cleaned and refinished. The well was filled with fresh soil and peat moss and the lady of the house planted brightly-colored flowers.

G. Brinkman, Okawville, Ill.

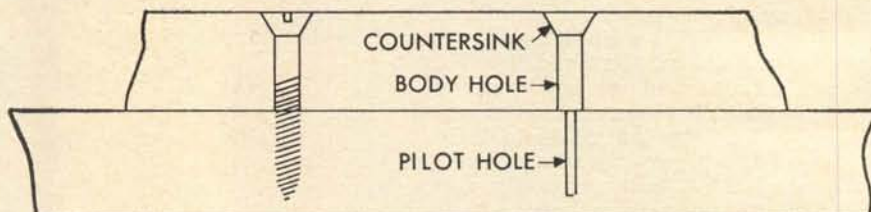
Torch-Tank Holder



This handy holder permits a propane torch to be positioned at the most convenient level, and the best angle for a job. It consists of a 3-in. strip of sheet metal long enough to reach around the tank and provide two 3/4-in. flanges for a screw and thumbnut. The U-shape support is a piece of 1/8-in. steel flat with holes in the bottom to permit attaching it to a wooden base with wood screws. Two holes in the ends of the arms accept machine screws fitted in holes in the sheet-metal clamp. Thumbnuts on these screws "lock" the tank at the desired angle.

T. R. Hixson, Mt. Union, Pa.

Screw-Body And Pilot Holes

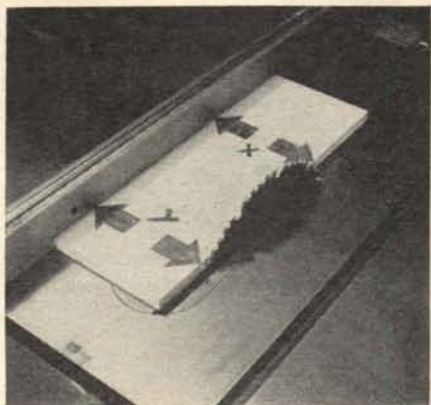


Keep the following table handy in the shop. It will save you considerable time and help you in doing better screw-driving jobs.

DRILL SIZES FOR SCREW-BODY AND PILOT HOLES

Screw Size	Body Hole		Pilot Hole			
			Hardwood		Softwood	
	Fract. Size	Number Size	Fract. Size	Number Size	Fract. Size	Number Size
4	7/64"	34	1/16"	52	3/64"	56
5	1/8"	30	5/64"	47	1/16"	52
6	9/64"	29	5/64"	47	1/16"	52
7	5/32"	25	3/32"	42	1/16"	52
8	11/64"	20	3/32"	42	5/64"	47
9	3/16"	16	7/64"	34	5/64"	47
10	3/16"	12	7/64"	34	3/32"	42
11	13/64"	6	1/8"	30	3/32"	42
12	7/32"	3	1/8"	30	7/64"	34

Fence-Alignment Rule

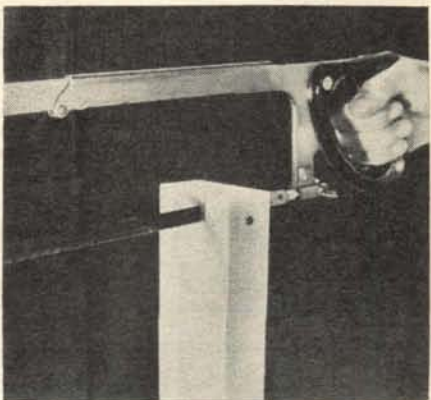


Many beginning power-tool users have difficulty with rip cuts only because they do not properly align the rip fence. The fence should be absolutely parallel with the blade ($X=Y$). The only exception is when the fence is deliberately offset slightly so that "Y" is more than "X"—this is to eliminate drag and feathering, especially on plywood. But "X" should never be greater than "Y".

Spacer Protects Straightedge

To avoid damaging a straightedge, such as a yardstick or T-square, when making a cut with a knife or razor blade, just clamp a coin to the blade with a tiny C-clamp. Allowance must be made for the thickness of the coin when positioning the straightedge for cutting.

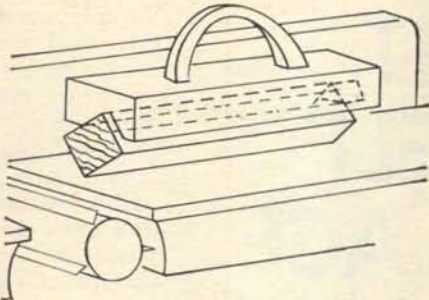
Cutting Screws To Length



When it is necessary to cut machine screws to length, try the idea shown: Drill a hole in a block of wood for the screw, then cut through the block and screw with a hacksaw. This method prevents damaging the screw, as would occur when gripping it with a vise or pliers. The setup also acts as a jig when a number of screws are to be cut to the same length.

DeCristoforo, Los Altos, Calif.

Jointer Push Stick



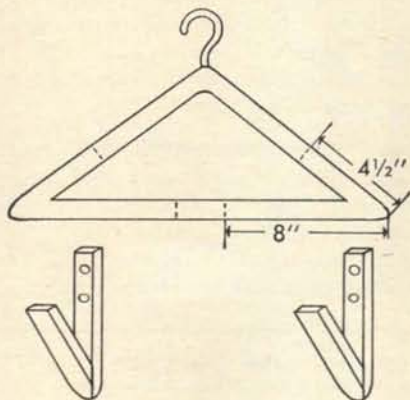
When it was necessary to bevel the corners of a number of pieces of square stock on a jointer, I made the push stick detailed in the drawing. A 90-deg. V-notch is cut in a piece of 2 x 4 that is fitted with a handle. A scrap of the sawed-out V-shape piece is bradded in the notch at the back end as a "hook" for pushing the stock. The notch is offset, so the stock does not touch the fence. Instead, the flat edge of the push stick bears against the fence and keeps the stock level as it is run over the jointer knives.

R. R. Hixson, Mt. Union, Pa.

Hook Improves Yardstick

When a small L-hook is fitted in the end of a yardstick, it can be used like a steel tape to hook over the edge of the work. Drill a pilot hole for the hook so it can be turned in without splitting the wood. When used in a normal way, the hook is turned to one side.

Easy Gun Rack



When I needed a rack to hang a rifle, but did not want to make it a complicated project, I used a single wooden coat hanger for the job. I cut a V-shape section from each end of the hanger, as indicated, sanded them smooth, then drilled and countersunk two holes in each for wood screws.

Vernon Baumhardt, Colorado

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By Donald B. Warner

Some years ago the seed for this idea was planted quite by accident. I was doing some special development work in a small town. Nearby was a larger town of about 30,000 population. To finish my job I had to have a certain common article of commerce. It had to be made up to my specifications. In any big city such as Chicago or New York I could have given my order in the morning and gotten my product the next day.

But in this little town I couldn't find a soul who could make it for me. One merchant said he thought I could get it in the larger town a few miles away. I drove over. Yes, they could have it made for me, but it would take a week because they had to mail the order to a big city and wait for the materials to come back. I was blocked. I had to figure out another way to finish my job.

This experience aroused my curiosity. I knew the product I wanted was not hard to make. A sixteen year old boy could learn to do it. And, it was so easy to do that a man of seventy could handle all the details without physical strain. I knew that the cost of the raw materials that went into it was small. I knew that the product—when made to order for special uses—brings back many times the price it appears to be worth. And, I knew that the need and the demand for this product ran into hundreds of thousands—maybe millions—annually.

I started to investigate the market. Many factories use from 10 to two hundred of these products and have them made over fresh and different every time they change their stock numbers. Business offices use them. Institutions such as libraries and hospitals and schools use them. Even individuals have them made

to order for personal use. The market was big and growing. The demand was there, but the sources of supply were concentrated in the big cities. And, in thousands of small towns all over the country business men had to wait for a week or more to get their orders filled.

Here was a "sleeper"—a perfect spare time business. It was not so big that it would support a full time operation in a town of from five to fifty thousand. As a result it had not attracted the attention of "big business." Yet, it was big enough even in a small town, to pay a nice profit to one individual who wanted to make the product in spare time.

I went further in my investigation. I discovered that the equipment needed to make this product was simple and inexpensive. I discovered that any one could learn to do it in a few hours by just reading the instruction. I discovered that just one little job which would sell for more than \$10.00 cost only \$1.62 for the raw materials. The dollar return was about \$6.00 back for each \$1.00 worth of materials. So, a man could make a good profit on his time.

When I had satisfied myself that I had uncovered an almost unsuspected business idea for individuals I went to work on assembling the necessary equipment and materials and I am now ready to share my plan with anyone who is will-

Would you do any less? Suppose you uncovered a unique and unusual way to make money at home—in spare time—without risking your job or your paycheck. Suppose you knew that hundreds of families needed extra money either to make ends meet or to enjoy a few luxuries. Would you share it with other men as I have decided to do? I think most men would share and that is why I'm printing the details in this magazine.

ing to do a little work to get the extra money he wants.

Right now, if you are interested, I'll send you complete information by prepaid mail. No charge, no obligation whatever. After you read all about the product and the plan, if you then wish to make an investigation in your locality, I'll let you invest \$10.00 for the complete instructions for doing the work and getting the orders for the product. But, even then, if you decide this business is not to your liking, you can return the instructions and I'll send back your \$10.00 deposit. You will not be obligated at any point and as I have no salesmen, there will not be anyone knocking at your door to try to high pressure you into buying something.

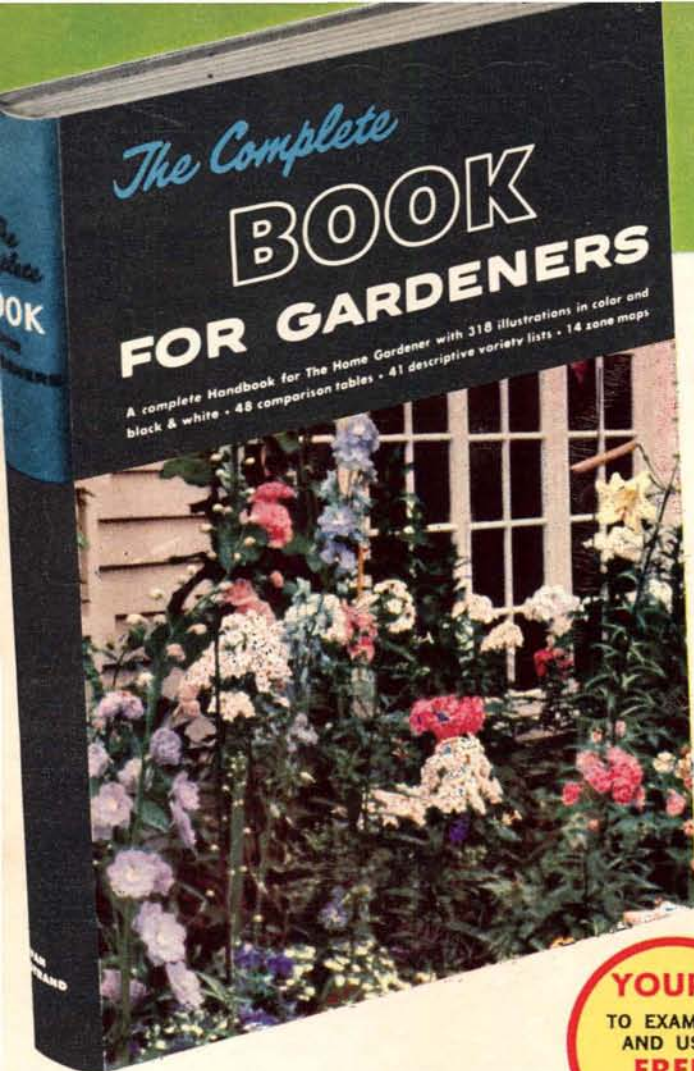
I have intentionally avoided revealing the name of this product as I do not want to broadcast it to the world. But if you have a desire or a need for extra money—without risking your job or your present paycheck—and if you're willing to put in a few spare hours in the evening or on week ends at home, I'll be glad to mail all this information. Don't send any money now. Just mail the coupon to me and I'll mail all the facts to you. Then you can decide whether you want to take the next step.

Donald B. Warner
1512 Jarvis Ave., Chicago 26, Illinois

Donald B. Warner, Dept. R-6-EE
1512 Jarvis Ave., Chicago 26, Illinois

Dear Mr. Warner: I am not just a curiosity seeker. I am sincerely interested in finding a good way to make money in a small home manufacturing business that can be run in spare time without giving up my job or sacrificing my paycheck. If you mail the details of your plan by prepaid mail, I promise to read the facts with care. That is my only obligation. There is no charge for this preliminary information now or at any other time and no salesman will call at my home to try to sell me anything. After reading your information I will decide whether I want to take the next step. Mail to

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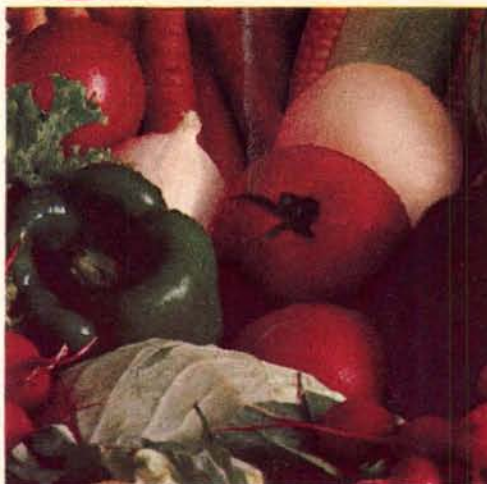
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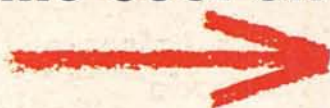
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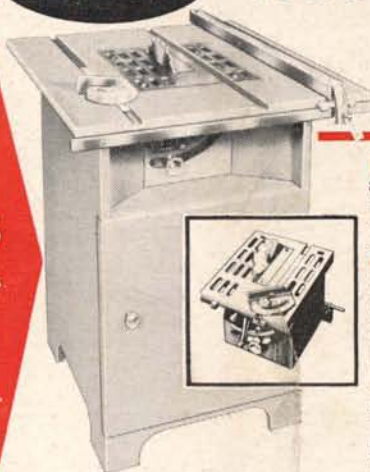
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